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JNO. R. DUNLAP. H. C. PEARSON.

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LESSONS FROM THE CULTURE OF QUININE.

THE commerce of Colombia has suffered a serious loss in recent years through the decrease in the exports of quinine-bark. The cinchona-trees still abound there, and the forests are open to the enterprise of all who choose to engage in the collection of the bark. But since the success of the cultivation of these trees in India it has been impossible for the bark gathered wild in Colombia to compete with the cultivated product. The official figures show a great change in the sources of supply of the cinchona bark imported into the United States, and the story from every other importing country is the same. The first table relates to a period when the cultivation of quinine had scarcely been thought of seriously:

	1855.	1856.	1857.
Total United States Imports of Cinchona-bark (pounds)	1,952,742	1,852,588	1,832,340
Total from South America, direct	643,651	1,756,413	1,775,836
From Colombia	357,455	1,717,797	1,587,913
From British East Indies	none.	none.	none.

Without stopping to consider how many thousand tons of this bark were afterwards used in the United States alone (the imports credited to Colombia in 1876 amounted to 4,802,728 pounds), we may look at the sources of supply during the past three years, noting that the amounts credited to England are mainly the product of her Indian colonies:

	1890.	1891.	1892.
Total United States Imports of Cinchona-bark (pounds)	2,838,618	2,901,783	3,434,875
Total from South America, direct	58,054	2,463	6,128
From Colombia	14,925	none.	none.
From England	1,978,983	999,682	643,385
From British East Indies	538,483	1,410,285	2,062,608

Other evidences might be given of the great decline in income from the once profitable forests of *Cinchonaceæ* in Colombia. In Peru, where the virtues of quinine first came to light, and which country was long supposed to have a monopoly of this valuable product, the gathering of the bark suffered less promptly from the competition of India, on account of the comparative accessibility of the trees. Peru produced, as recently as 1882, about 9,000,000 pounds of bark, but by methods which robbed the country of its wealth. The result is stated by H. Guillaume, in his book on "The Amazon Provinces of Peru" [London: 1888], where he writes: "The reckless manner of gathering the bark will, ere long, remove all traces of cinchona vegetation."

By the cultivation of the cinchona-tree the world has been assured against exhaustion of the supply of an invaluable remedy, and the price has been reduced until, as has been shown, it is no longer profitable to gather free bark and carry it to market. Besides, bark richer in quality has been produced on the plantations.

There are important lessons in all of this for the India-rubber interest.

While the cultivation of rubber has attracted little favorable attention so far, no objection has been made to its practicability that might not have applied with equal force to the cultivation of quinine. The native supply of cinchona-

trees was so great that exhaustion long seemed impossible; certainly no cultivated product could compete with bark which could be had free, with the cost added of cheap labor for gathering it; perhaps the cultivated bark, in a distant land, would be less rich in alkaloids; besides, a great deal of time would be required for any returns from the investment in planting.

The quinine experiment in India has taken time. Beginning in 1859, it was not until 1873 that one of the plantations shipped 25,000 pounds of crude bark to London. But from that date progress was rapid. According to Mulhall, the plantations in Ceylon alone, begun in 1869, contained in 1880 no less than 77,000,000 plants, and yielded 1,260,000 pounds of bark. In 1886 the exports of bark from Ceylon amounted to 15,000,000 pounds, and the number of trees and extent of the product has steadily increased since. As Mr. Courtenay De Kalb writes from the Nicaragua rubber country: "To be sure, it takes ten years to mature a rubber-tree, but—ten years roll quickly by, and the people have plenty of leisure." There are several plantations in Mexico, of less than ten years' standing, that are beginning to yield rubber in good measure.

The effect of cultivation upon the cinchona-trees has revealed unexpected advantages. Not only is the productiveness of these plants not diminished by transplantation, but this productiveness has been increased very considerably by cultivation. By covering the stems of the trees with a layer of moss, so as completely to protect the bark against the influence of sunlight, the yield of the bark in alkaloids is said to be doubled, trebled, or increased in even larger proportions. Besides, the trees are rendered continuously productive by this method: If a longitudinal strip of bark is removed from the trunk, and the bared portion is covered with moss, the bark is renewed; from time to time other strips may be taken, until the whole of the old bark is removed, and the new ready for removal by a repetition of the same process. It has been found that the application of certain manures, though not noticeably affecting the growth of the plants, has a remarkable effect in increasing the product of the alkaloids.

It is not known what would be the effect of cultivation upon the India-rubber tree with respect to the quality of the yield. There are some suggestions of interest, however, in the article by Mr. F. O. Harriman, a civil engineer in Tehuantepec, in another part of this paper. On his rubber plantation the cultivated trees are twice as large in diameter as trees of the same age in adjacent forests. "This is a most important point," he writes, "for on the bark-area depends the quantity of milk a tree will give, and also the frequency with which tapping may be practised." The same writer points out the inconvenience and expense of tapping rubber-trees scattered through the forests, the labor being greatly lessened when the trees are grouped together—as they would be on a plantation—without any foreign growth to impede the laborers.

The chief point to consider with regard to rubber-culture is not whether we are in danger of exhausting the native supplies,—though that has become a practical question in some countries,—but whether rubber might not be produced more cheaply under cultivation than it can now be gained in the forests. In addition to the convenience of gathering cultivated rubber, it would be possible to prepare it for market without a great part of the impurities now contained even in the better grades, thus rendering it more desirable for manufacturers. The cultivation of quinine is worth further study for points which may afford suggestions bearing upon the future methods of rubber supply.

CONDITION OF THE UNITED STATES RUBBER CO.

REFERRING to the assertion sometimes heard, that the common stock of the United States Rubber Co. is "water" and that the preferred stock represents properties taken at inflated values, the Boston *Commercial Bulletin* publishes some details purporting to come from an authoritative source. At the time of organization the values of the different properties were determined by the appraisement of Charles S. Smith, president of the Chamber of Commerce of New York; Henry W. Cannon, president of the Chase National Bank of New York; and Charles H. Dalton, of Boston, assisted by experts, the appraisement being based on actual cash values of the plants. The cash assets of the various companies—bills and accounts receivable—were guaranteed by each company, stock of the United States Rubber Co. being held by the Central Trust Co., of New York, to insure this guarantee.

In payment for these assets preferred stock of the United States Rubber Co. was issued. The common stock was then given to represent the good will of the business, trade-marks, patent rights, etc. The value of "good will" is apparent when one considers the cost of putting a new rubber factory on a paying basis, including the introduction of new brands of goods upon the market. As an illustration it is mentioned that a company having $1,000,000 capital has shown recently that could it have manufactured from its start up to date as cheaply as it manufactures at present, it would now be $1,300,000 better off, and this difference has resulted in a very few years only. To a certain extent the cost of establishing a business, therefore, is legitimately to be capitalized.

It is claimed that the United States Rubber Co. have made good profits, owing to the large consumption of rubber shoes during the past winter, the rise in prices, and the more direct benefits obtained through the combination of manufacturers. The United States Rubber Co. have reduced expenses in the way of salaries and rents, and in buying raw materials in large quantities, thereby obtaining a considerable discount from the prices of the several old companies when competing as buyers. The conclusion of the *Commercial Bulletin's* article is in these words:

"In the earnings and ability to manufacture more cheaply, the United States Rubber Co. has so far justified its organization. With an excellent trade condition and outlook, this is one of the 'Industrial' concerns which promises to give a good account of itself to the public and to its stockholders in the near future. The officers of the company are the men who have developed this great industry, and it is certainly gratifying to know that they are the largest stockholders of both preferred and common stock."

THE Lambertville (N. J.) Rubber Works were shut down for two weeks on July 1, for making necessary repairs.

RUBBER-PLANTING ON THE ISTHMUS OF TEHUANTEPEC.

By F. O. Harriman, C. E., Jaltipan, Vera Cruz.

IN his able report on the isthmus of Tehuantepec, Mr. J. J. Williams* states that India-rubber trees are found in astonishing numbers throughout the forests that skirt the streams, and adds: "Taking half the number of trees found within an area of one-fourth of a square mile, on the Uspanapa river, as a basis of our estimates, and allowing none to grow on the Pacific plains, there would be found not less than 2,000,000 India-rubber trees within the limits of the isthmus, some of which yield four and five pounds of gum in a year. If from this prodigious number of trees we suppose only one-half to be available, and that a single pound per tree per annum be the average yield, we should have 1,000,000 pounds," etc. The isthmus for this calculation is assumed to comprise an area 106 miles wide from east to west, and 143 miles between oceans. It is assumed, too, that no rubber is found between the ridge of Sierra Madre and the Pacific ocean, or about one fourth of the total area. The number of trees per square mile according to this estimate would be about ninety. Señor Alejandro Prierto, in his report on the isthmus, made while in charge of the isthmus railroad surveys for the Mexican government in 1887, also estimates the number of rubber-trees in this district to be over 2,000,000.

After ten years' experience on the isthmus, being especially interested in studying the subject of rubber, I find that from this extension of land north of the Sierra Madre should be eliminated all the lands along the gulf coast, the very low lands along the rivers subject to periodic overflows, and the treeless savannahs, which leaves a great deal less than one-half of the area of the isthmus as rubber-producing territory. It happens, however, that the locality chosen by Mr. Williams as a base for his estimates is of all Tehuantepec the part containing the smallest number of rubber-trees, so that he by no means does justice to the amount of rubber to be found native on the isthmus. At least the average number of trees per square mile is much greater than that given in the report mentioned.

The collection of rubber has been carried on mostly by parties engaged in the mahogany and cedar industry, as a secondary business only. When rubber-trees were encountered, they invariably were felled and completely bled, trees three and four feet in diameter thus often giving as much as ten to twenty pounds of pure rubber. Although a great cry has been made against this destruction of the trees, it is the only profitable way of obtaining wild rubber in many localities. It would be impossible to keep an account of the trees under any system of tapping, and a heavy task to keep open paths in the tangled forests in order to tap the same trees repeatedly. Besides, the rubber-gatherers are apt to change the scene of their labors from year to year.

Formerly another class worked the rubber in the lands adjoining the towns and settlements, and here the natural trees have been greatly diminished in number by the greed and indifference of the parties engaged, who obtained permission for a mere song to extract rubber from town lands and private estates, and many small fortunes have been made in this manner at the expense of the present owners of the land.

The rubber from Mexico seen in the United States has been principally that collected by the Indians, who prepare it as they choose, which accounts for its poor condition. The rubber milk is often coagulated right where collected, by the alkaline juices of certain vines, and thrown on the ground, consequently absorbing a great amount of earthy matter, besides containing a large amount of the black liquid of the milk.

About ten years ago experiments were made in the use of rubber-trees for shading coffee, which, from certain climatic reasons, requires shade in this region of the isthmus. The rubber-tree (*Castilloa elastica*) was found to give as good if not better results than any of the woods formerly used, and all new plantations are substituting this shade-tree.

On account of the continued high price of both coffee and rubber for several years past, and of the great advantages of this district in fertility, excellence of its coffee, favorable means of communication both by river and the isthmus railroad, and nearness to the markets of the United States, a great stride has been made in their production. Without doubt this district will become a most important factor in the world's production of both rubber and coffee.

In the town of Jaltipan, for instance, where ten years ago there were not more than 30,000 coffee trees and no planted rubber, we find to-day hundreds of thousands of coffee-trees, with corresponding rubber shade-trees. There is a great boom in this interest all over the isthmus, natives and foreigners trying to ou'do each other.

Five years ago the writer undertook the formation of a small plantation of rubber, after studying the practical working of the only two plantations then in operation. Additions have been made in each year since. From this experience, and that of the other planters, the conclusion had been reached that the following method in forming coffee- and rubber-plantations in this section gives the best results.

The best land adapted for rubber in Tehuantepec is that usually chosen for coffee and tobacco,—a sandy loam with much vegetable decay, with little clay, and not subject to overflows. The land should be entirely cleared, burned over, and ready by the middle of May, which is the begin-

**The Isthmus of Tehuantepec:* Being the Results of a Survey for a Railroad to Connect the Atlantic and Pacific Oceans . . . under the direction of Major J. G. Barnard, U. S. Engineers . . . arranged and prepared. . . . by J. J. Williams, Principal Assistant Engineer. New York: Appleton, 1852.

ning of the rainy season. Stumps will then soon rot out and give litttle trouble. Bananas are first planted, three or four yards apart, depending on the class used, followed immediately by corn (maize), which is planted without plowing. The rubber and coffee are then planted, the former generally from seed five or six yards apart, and the latter, one-year-old plants, 2½ to 3 yards apart, so that each rubber-tree shall finally shade four coffee-plants.

The young coffee and rubber both need shade; else a great proportion of the plants will be lost while young through being scalded by the sun after severe showers. At the beginning this shade is better supplied by corn; besides, the crop will help to pay the expenses of planting. After four months, when the corn will no longer give shade, its place is taken by the bananas until the third or fourth year, when the rubber alone answers this purpose. Of course the bananas are gradually removed. They grow very quickly, a single plant giving off many suckers, from which sets are obtained, and the cost of planting is comparatively very small.

It is absolutely necessary that the plantation shall have four thorough weedings or cleanings, the first year, by means of machetes, hoes, and tapalas,—and I find that one hoeing greatly improves the growth. The soil is such that this may be done easily, although not plowed at first. After the first year, until the fourth, only three cleanings a year are necessary.

Our coffee will bear the third year after setting out, and the fourth year the average yield is about two pounds per tree. One plantation in the district of Pena Blanca gives a yearly average of over three pounds, which is a great deal more than the average of the plantations in the high altitudes of Cordova, Orezala, Oaxaca, and Guatamala, where one pound per tree is considered a good yield. The old theory that coffee should be planted at an elevation of over 3000 feet is entirely without foundation. It arose from the simple fact that plantations were formerly mostly made in high localities on account of life being more pleasant there, the climate being cooler and more healthy, and disagreeable insects being less plentiful. Lands on the isthmus at an elevation of 400 to 1500 feet have the advantages (1) of producing a greater quantity per tree of coffee, (2) of being much better adapted to the growth of rubber, and (3) of being adapted to cacao culture, besides having more fertile soils. Our coffee-trees spread out very much, and, even when planted 2½ and 3 yards apart, will interlace after four years, when the ground below becomes so shaded that little or no work is needed in cleaning.

Rubber-trees planted in this manner thicken in the trunk very much faster than when under the shade of the forest trees. On the writer's plantation there are four-year-old trees over eight inches in diameter, while on the same land, under the shade of a forest which has been cleaned from small growth, the trees of the same age have not more than half this diameter. This is a most important point, for on the bark-area depends the quantity of milk a tree will give, and also the frequency with which tapping may be practiced.

The trees already planted on the isthmus of Tehuantepec will in a year or two, when yielding, give a much larger yearly output of rubber—more carefully prepared and at a minimum expense to the worker—than was ever obtained from the wild trees of this section. The time generally allowed before tapping is from five to seven years, but under exceptionally favorable conditions I have seen trees profitably worked after the fourth year.

From a sample bale of cultivated rubber* from the isthmus, which perhaps is above the ordinary rubber shipped from Mexico, as regards freedom from impurities, a small amount was submitted to the superintendent of one of the principal rubber mills in the United States, a man of large experience in crude rubber. He reports in regard to it as follows: "In preparing this rubber for mechanical goods I find the shrinkage exceedingly small,—smaller than some of the finest grades of Pará, being only 6 per cent. The sample was unusually free from residue. A part was mixed with zinc white, whiting, and sulphur, and gave a superior white color, together with a very smooth finish. It was adapted for tubing, having great elasticity and strength, and I consider it a grade of rubber capable of entering into the manufacture of all goods for which fine Pará is now used."

From actual experience in planting coffee with rubber shade I find that it can be done (including cleaning ground, buying plants, setting out, resetting those that die, and the three cleanings that are needed) for 9 cents per tree. This is for one rubber-tree to four coffee-trees. The second year there will be about 10 per cent. of resetting on account of loss to weaker plants, or say nine-tenths of 1 cent per tree. The three cleanings in the second year will each cost 37½ cents per hundred trees, including twenty-five rubbers, or $1.12½ for the three cleanings,—that is, 1⅛ cents per tree. The third year the cost will be the same, and the total cost by the time the coffee begins to produce will be 12¼ cents. For 100,000 coffee-trees and the corresponding 25,000 rubber-trees we have a total cost of plantation for three years (not including salary of manager, etc.,) of $12,200. The third year the crop will be so small that it may only pay for picking, but the fourth year it will be profitable, and, as the ground is so well shaded by this time, very little work in cleaning will be necessary.

An extremely low average yield of coffee on the isthmus is two pounds per tree, which will give 200,000 pounds for our plantation. No coffee has been sold in the State of Vera Cruz in the past year at less than 20 cents (in Mexican silver) per pound, which would give $40,000. Allowing $10,000 per year for maximum cost of picking and cleaning, we have, after the fourth year, $30,000 profit, if coffee continues at the same price.

Coffee-trees increase in yield up to the tenth or twelfth year, remaining stationary to about the twentieth year, and then decline to about the thirtieth year, when they should be removed, intervening ones having been set out to take their place.

Rubber-trees will be productive after six years on the

* This rubber, the writer states, was obtained from trees four years old, on his plantation. A number of small articles made from this rubber, exhibited in the INDIA RUBBER WORLD office, were apparently of a first-class quality of gum.—THE EDITOR.

isthmus, and will give at first from one to three pounds of pure rubber, and will produce afterwards three pounds yearly as a certainty. One pound is more than sufficient to pay the cost of extraction, coagulation, and drying, thus leaving two pounds of pure rubber per tree, or 50,000 pounds for the 25,000 rubber shade trees for the coffee.

For the past ten years Pará rubber (and this grade can be produced as well in Mexico as in Brazil, depending simply on the method of coagulation) has not been lower than 60 cents in gold, and has reached $1 ; but at the lowest price we have a profit of $1.20 per tree, or $30,000 gold, for our 25,000 rubber-trees.

In all old coffee plantations shade trees were used that were useless in other respects, but we have substituted a shade that in seven years will in itself alone more than pay all expenses of the plantation of to-day,—both coffee and rubber, cultivation and cost of land,—and pay an interest on the capital invested.

Putting the value upon the coffee- and rubber-trees that is customary on the isthmus,—50 cents for coffee and $4 for rubber,—we have for the 100,000 coffee-trees $50,000, and for the 25,000 rubber-trees, $100,000, or a total of $150,000. This should give a net yearly income of $50,540 gold, which may be seen, without further calculation, to be a handsome rate of profit.

Jaltipan, Mexico, July 15, 1893.

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ADDENDUM BY THE EDITOR.

THE isthmus of Tehuantepec is that portion of the Mexican republic which lies between the gulf of Mexico and the Pacific ocean, where the two seas approach the nearest to each other, comprising the eastern portions of the States of Vera Cruz and Oaxaca. The eyes of the world have been much upon this narrow belt of land since the first landing of Cortez at Vera Cruz to begin his conquest of Mexico. Before the discovery of gold in California, and the subsequent settlement of the "Great Desert" beyond the Mississippi, those ambitious American citizens who felt that the opportunities for enterprise at home were limited dreamed of a royal road to wealth that should lie across the Pacific, to be reached without rounding "the Horn." A closer connection of the two oceans across the isthmus of Tehuantepec was always an alluring scheme, and one that has not yet lost its charm for American engineers and capitalists. So it comes that the isthmus has been much explored and much written about. A Tehuantepec canal or railway has always been thought capable of developing a vast local traffic, in which India-rubber should be a factor.

The eminent Italian engineer, Signor Gaetano Moro, made a survey of the isthmus in 1842–43 for Don José de Goray, who had a grant from Dictator Santa Anna for opening communication between the oceans, and wrote in his report: "In various parts, but particularly in the neighborhood of Jaltipan, I have observed the siphonia cahuca, from which the caoutchouc, or India-rubber, is obtained." But it was when Peter A. Hargous of New York and his associates had become possessed of the Goray franchises that the most thorough survey was made, by United States Army engineers [1850]. In the report written by Mr. Williams, which is quoted from in the preceding article, appear some facts of present interest.

Not less important in value, perhaps [he says in enumerating the resources of the isthmus], is the *siphonia elastica*, which is found in astonishing numbers throughout the forests that skirt the tributary streams. Its value, however, is so little appreciated there, that the gum is only gathered for footballs, or for some few medicinal purposes. The process of extracting the gum is accomplished by *tapping*, not *belting*, the tree. Two incisions are made through the bark, one above the other, from the lower one of which flows a copious stream of milk-like juice, which, when collected in proper recipients [*sic*], is speedily indurated by adding the juice of a vine, called by the Zapotecos *bejuca de joamole*, and always found coexistent with the India-rubber tree. By means of this process the *white* gum is produced. When the milk is simply left to congeal in the rays of the sun, the gum becomes dark. The fluid known as *caoutchoucine*, the specific gravity of which in its liquid state is less than that of any other liquid known to chemists, but the vapor of which is so heavy that it may be poured from one vessel to another like water, is prepared from the juice of this tree in the laboratory, and is one of the best solvents for the rubber yet known.

The juice of this vine is used to this day in coagulating the rubber that reaches New York from Vera Cruz, and the methods of the natives have been borrowed by the rubber-planters, who, like Mr. Harriman, regard it as better suited than the palm-nuts of Brazil for curing rubber. Doubtless there is a problem for the chemists to decide, whether the milk of all the various rubber-bearing species is susceptible of treatment by the same curing agents.

FALL STYLES IN MACKINTOSH GARMENTS.

By Loie Vorrath.

THE characteristics of the Empire style are apparent in the latest designs of cloaks for the approaching season. The unconfined waist, the folds and plaits in front and back, the general looseness, all belong to this style. As might be expected, the mackintosh will in a manner be influenced by the general fashion in cloaks. Heretofore the long Inverness cape-coat has reigned supreme. To be sure, many mackintoshes were worn without capes, such as the close-fitting Newmarket, with belt and hood, but they were after all of the Inverness pattern with the cape left off.

The progress of the waterproof garment in its march into public favor is remarkable. It is only a short time since the ugly, black, shiny rubber cloaks made the fairest woman look like a peddler's oil cloth-covered sack. And now the smart coat of the busy shopper on a rainy day does not savor even slightly of the rubber plant. The rubber does not obtrude itself unpleasantly. The cloth is manufactured with a view to pleasing the eye, without offending the nostrils.

Whatever the reason, the disposition to conceal the rubber contained in the composition of the mackintosh is unquestioned. Therefore, when Mrs. A. blossomed out in a brand-new tan cloak with big white pearl buttons and observed the evident envy she excited in the breast of Mrs. B. ; it made her feel so good that she poured out the secret of its being waterproof into the astonished ears of her friend ; and a few days later Mrs. B. communicated to Mr. B.

her intention to draw upon the family exchequer for the price of a certain tan coat which had been haunting her dreams and causing much loss of sleep. That was the beginning of the mackintosh craze.

The demand increased rapidly, and the manufacturers set themselves the task of making their goods attractive as well as useful, with the most gratifying results. They have since been enabled to reduce the prices to a point which brings a mackintosh within the reach of even the most humble.

A leading manufacturer has recently put upon the market a cloth to which he has given the fanciful name of "Cravenette." It looks like a fine serge, showing no rubber on either side, yet absolutely waterproof. He anticipates an enthusiastic welcome for his protégé. It certainly possesses many good qualities, being light and durable at the same time. Inverness coats for men, with velvet collars and very wide capes, are made of Cravenette.

For both men and women checks seem to have a charm. The plain navy blues and blacks have been relegated to the back-ground, though they will probably always find favor in the eyes of a few. Among the novelties for the coming season is a voluminous military cape for lady horseback riders. It is just long enough to protect the greater part of the clothing of the rider, and looks very stylish in a check composed of light and dark brown and ecru, with two small shoulder tippets and a high collar. A cap to match is worn with this garment, and the combination is likely to fill a long-felt want.

The long, full circular is coming in again, and for covering the voluminous sleeves and skirts now in vogue appear to be just the thing. A light grey check, lined with red silk, and having two little shoulder tippets, makes a pretty garment. A similar one is made of the queerest combination of colors,—light blue, pink, tan, green, and ecru, all blended bewilderingly but happily,—and has a hood. Some of these circulars are certainly seven yards wide, and there is not a single fold or plait at the neck.

A cloth with brown arabesque figures on a silver gray ground made in Empire style, tight-fitting till just below the armpits, and then falling loose in multitudinous folds, presents a curious appearance. It has large, full sleeves and high collar, with no fastening visible.

Many of next season's reefer suits will be made waterproof. These ought to be very popular, consisting of a full gored skirt and long double-breasted coat with big pearl buttons. A cap and overgaiters to match are worn with this costume, which ought to please the fancy of the fastidious.

A swagger-looking garment is a coachman's surtout in coachman's tan with bright silver buttons, and fitting closely to the figure. This ought to become very popular, being much more presentable than the long, uncomfortable looking capes which coachmen are now wearing.

Nearly all driving coats for men will be made waterproof. The loose-fitting double-breasted kersey and melton coats, with the ornamental white pearl buttons, look well on all men, and the light tan is likely to fade into a beautiful cream white, which color is seen most frequently in the latest designs. Velvet collars are used to the exclusion of all others on the new garments for men.

Among the less elaborate cloaks for ladies the cape coats promise to be much worn. One very pretty coat is made with a long cape reaching half the length of the garment, and two small shoulder tippets. These come in navy blue or in fancy checks in gray and in light brown. A similar garment has three graduated capes and a velvet collar, and ought to be very becoming to tall women.

Perhaps the most graceful of the new cloaks is one of gray and black mixed cloth. It is made tight-fitting in the back and front, and has very wide sleeves with long cuffs very tight at the wrists. Falling from the neck on either side of the fastening in front is a graduated flounce of the cloth, which droops over the shoulder in the most advanced style.

Serviceable and almost indispensable as the mackintosh undoubtedly is, there has always been one drawback to its unrivaled popularity. An objection frequently made is that it is "too hot." Every precaution is now taken to avoid this adverse criticism, with a result highly pleasing to all. The new mackintoshes are ventilated thus: They are sleeveless, and underneath the voluminous cape the cloth is cut away, the empty space extending all the way round to within six inches on either side of the buttons in front. This is a clever innovation and one that will aid the manufacturer in popularizing his products.

In the matter of linings there is something new, also devised to protect the wearer from the humidity of the atmosphere and at the same time render frequent mopping of the brow superfluous. Fine stripes of gaily colored silk are laid directly on the rubber, the effect being as good as would be that of a silk lining, without adding anything to the weight of the garment.

These devices are employed most largely in the less expensive mackintoshes. A more costly garment, such as a reefer suit or an Empire cloak, always has a lining of silk, as watertight as the top cloth. These garments, however, are exceedingly heavy and not suitable for wear except in the coldest weather.

One Empire cloak was especially cumbersome, though it did not look at all ungraceful. The dark green cloth hung in many folds from a square yoke, heavily braided with fine black braid; and the sleeves consisted of a long puff ending at the wrist in a small pointed cuff. This garment for elegance could not be surpassed, though its cost would probably make many a feminine heart feel suddenly heavy. The capes and shoulder tippets, moreover, are very stylish and suited to most figures; whereas, if one is either above or below medium height, she will not look well in an Empire cloak. There is no necessity for confining one's self to this eccentric style. The untiring efforts of the leading manufacturers to contribute a variety of designs will prevent a satiation of the buyers' tastes.

The Empire has established a place for itself, but the struggle for supremacy is by no means at an end. Capes are still popular.

New York, August 1, 1893.

RECENT TENDENCIES IN THE MACKINTOSH TRADE.

By I. A. Sherman.

THE styles in mackintoshes during the coming fall and winter will be blue and black, or, as one manufacturer puts it, "blue and black, black and blue, and black and blue on top of that." Certain it is that styles will be of a very simple character, and that 75 per cent. will be in the above colors. This is not a time for manufacturers to experiment, and they do not care to risk much to cater to any vague fancy that might or might not come about in the tastes of the buyer three months hence. Outside of the 75 per cent. mentioned there will be a few plaids, with some miscellaneous patterns that always go to make up an assortment. The mackintosh people follow as a rule ideas given them by the ordinary clothing man, and the remarks made reflect the timidity of the latter.

As to cravenette, a cloth new to us, lately imported from England, there is a decided growth in its popularity. The name given to garments made from it is "showerettes," and the appellation is accurate. Its votaries admit that it is an excellent article for April, and a poor one for December. It is a repellent of moisture, but, if there is enough rain, it will penetrate through to the inner garment, even drenching the wearer. The careless buyer is sure to be disappointed in taking for granted that it is waterproof,—a quality that some enthusiasts ascribe to it. Its good point is that it is light and is a ventilated garment,—an article that those who have several coats can afford to have in the wardrobe. It is not a cheap garment, for it costs two or three times the price of an ordinary mackintosh. It is an invention applicable to many grades of cloth, however, and in its variations probably will have a decided run. In England, where it has been in use four or five years, it has come up, attained its zenith in popularity, and now is giving way in public estimation. Its use is not confined to coats or cloaks, for the material, being light and neat in appearance, can be utilized for dress skirts and jackets for ordinary every-day use.

The new "rubber velvet," which comes in light grays and creams, of a solid color made of felt powdered over hot rubber will probably not last long in public favor, for it wears poorly and is apt to cockle. This, added to the disagreeable qualities of rubber, makes its use in garments no escape from the evils laid at the door of the ordinary mackintosh. Waterproof silks are now very little worn, their popularity having been on the wane for some years. Some cheap waterproofs are made of ribbed rubber of the conventional blue, and are quite pretty.

In shapes goods will run to tippets for women, there being one, two, three, and four capes, as the fancy of the wearer may dictate. This is following a fashion set by the dressmaker in ordinary garments, and hardly applicable to rubber goods, the latter being too heavy to pile in folds on the shoulders. Indeed in many quarters there is an idea that it is time for the designer of rubber apparel to depart from his servility to the fashion maker of ordinary garments, and keep himself in line with the peculiarities of the material upon which he is at work.

In this connection it is somewhat amusing to note a certain amount of jealousy displayed by clothing manufacturers against the mackintosh. This has probably been aroused by the intimation which sometimes gets into print that, if one cannot afford an overcoat and a mackintosh also, he should dispense with the former. This has aroused the ire of the cloakmaker, and he has commenced to call names. He says the mackintosh man will not wear his own goods, and he brings down his stick on the floor and tells you with a decision loudly toned that the rubber garment must go. Much of the popularity of the cravenette is perhaps due to the energy inspired by this peculiar jealousy in the trade.

GLIMPSES OF THE WORLD'S COLUMBIAN EXPOSITION.

Special Correspondence of "The India Rubber World."

CHICAGO, August 2.—In the Manufactures building, in the French section, is to be seen the exhibit of the Compagnie Nationale du Caoutchouc Souple, of Paris, showing a great variety of goods of interest to rubber-men. They have a stand on which are a great many different styles of rubber boots and shoes of types radically different from those worn in the United States. Some of them are improvements on our own goods, and some are not. The finish on all of them is excellent. One shoe, that perhaps attracts as much attention as any, is a neatly-shaped sandal with eyelets through which are drawn broad black laces which, on being tied, give a very natty appearance to the shoe. A case near this stand is filled largely with druggists' and surgical goods, such as trusses, catheters, bougies, and quite a variety of air-goods. Beyond this is a second stand, on which are the boots and heavier goods. The boots do not show the excellent finish that the lighter goods do; indeed, many of them have "bloomed" considerably, thus marring the otherwise fine effect. Many of the boots are lined with fleece or fur, and there is also a line of half-boots with fur tops which are very neat. There are also sundry bits of mold-work, rubber horseshoes, bicycle-treads, cushion tires (red and white), tubing, garden-hose, of which red seems to be the prevailing color, diaphragms, and general hard-rubber goods. There is also a large piece of suction-hose 6 feet high and 2½ feet in diameter that makes an impressive appearance.

In the section devoted to Austria, in the same building, Rachmann Brothers of Haida, Bohemia, show a new-style atomizer called the "Rose of Pergamus." It consists of a bouquet of handsome artificial flowers, back of which is a large red-bulb atomizer containing perfumery. From this bulb lead five black tubes, the ends terminating in tiny atomizers hidden in the flowers. Of course when the bulb is pressed the flowers emit a dainty perfume. In addition to this the same firm show some smaller atomizers attached to beautifully-decorated bottles of Bohemian glass. The rubber bulbs to these atomizers are notable in that they show two shades of red,—a very dark rich red and a yellow red,—both shades being different from those usually secured by the use of antimony.

The case containing the main exhibit of the Russian-American Rubber Co. was made in St. Petersburg at a cost of $10,000. The company sent a man over with it to set it up, and he is to return in October to see it taken down and safely packed. The total cost of the exhibit is stated at $20,000. Mr. Adolphus Pickel, one of the officials of the Russian-American company, spent some time in Chicago superintending the placing of the exhibit, but has returned to his home in St. Petersburg.

In the Russian exhibit is to be seen a patent rubber tire of the Yagn system. The tires look very much like a rubber billiard-cushion run on edge, the special advantage being that, while they take away all the jar of the ordinary round tire, it is impossible for them to throw mud upon any part of the carriage.

Adam Opel, Reuesselshein, near Frankfort o/M., Germany, exhibits twenty-three bicycles, all with handsome pneumatic tires. These tires bear a close resemblance to the best type of American make and are very handsomely finished.

Hurter, Hautin & Deligeon, of Paris, show some very fine bicycles, with both pneumatic and cushion tires, of French manufacture. The handles of the bicycles are of beautifully-finished hard rubber, and show a fineness of texture that is admirable.

The Boston Rubber Shoe Co. have a very fine exhibit at the Fair in the Shoe and Leather Trades building. As one approaches it from the south, the eye is arrested by a large sign calling attention to the "storm slipper," and a very handsome picture of the same. The pavilion in which the goods are displayed is white and gold and bears the well known seal of the Boston Rubber Shoe Co., with neat signs calling the attention of the passer-by to the goods shown. The goods themselves are displayed mainly in large glass cases, and are of so many styles that one is almost bewildered at the great variety. It is said that there are 750 different kinds shown in this exhibit. A feature of the exhibit that those who are not acquainted with the rubber trade seem to value very highly is a rubber tree so large and so healthy that Mr. Ten Eyck, who has charge of the exhibit, taps it occasionally, drawing a little of the milky juice from the tree and explaining to the visitor its connection with the manufactured goods shown on the inside. The center case is one that was used in the Paris Exposition, which has already been seen by many rubber-men, and is a very handsome affair. A case of curios may be seen in the same exhibit, including paddles, clay-vessels, palm-nuts, and other articles used by the Brazilian Indians in collecting rubber. In the rear, neatly framed and hung against the wall, are the paper patterns from which the various parts of the rubber boot are cut. These are twenty-six in number. There is also by their side another framed exhibit of patterns, which are those from which the "storm slipper" is cut, the parts being eight in number. Pictures of the two great factories of the Boston Rubber Shoe Co. as they now exist are wall decorations in the exhibit, and between them hangs an old-fashioned picture of the first factory building used by the company. The contrast between the two shows what great progress the company has made since their inception. A feature of the exhibit that none of the others have incorporated is a balcony, with seats for several guests, raised above the exhibit and in its rear, through which one can look out upon the waters of Lake Michigan and on the hottest days receive the cooling breeze that enters through the open windows.

An exhibit in the Shoe and Leather Trades building that has attracted much attention is that of the Wales-Goodyear Rubber Shoe Co. Their canopied pavilion is very handsomely decorated in nickel and gold, with an arched opening in the center through which the visitor enters the sanctum devoted to the display of rubber footwear. The exhibit proper consists of four large glass show-cases on the sides, and a circular one in the middle of the space. These are filled with beautifully finished goods in all styles,—some of them fur-topped and -lined, some with plush and rubber uppers, and others with silk uppers and rubber soles, all showing a degree of elegance that will reflect the greatest credit upon American manufactures. In the rear is a shoe large enough to hold a ten-year-old boy. Close to it are a pair of red-topped rubber boots that might well be thought to be the "seven-league boots" of olden times. On a table in the rear is a variety of boots, beginning with short boots and running up to knee-boots, hip-, and thigh-boots. Still another feature that is perhaps unique is an imitation of a leather stogie boot with an enamelled top and a stitched red sole. It looks for all the world as if the whole were made of leather, and yet as a matter of fact the whole of it is made of India-rubber, even to the red leather-like sole. There is also an imitation patent-leather shoe with sealskin trimming, with red leather sole and black heel, all made of rubber. Mr. Walter Clapp is in charge of the exhibit and is glad to give information to any who are interested in rubber goods. Visitors to the exhibit are usually given either a pair of the Wales Goodyear miniature boots, or a pair of miniature shoes in a neat box, which they seem to treasure more carefully than almost any of the souvenirs given away at the Fair.

The miniature rubber boots given away by companies exhibiting rubber goods at the Fair were put to a curious use by numbers of the summer girls that were constantly on the grounds. By attaching a gaily-decorated button to their jackets the tiny boots were hung on somewhat after the fashion of a *boutonniere*. They attracted considerable attention and really looked very cute.

The exhibit of the American Rubber Co. in the Shoe and Leather Trades building is exceedingly complete. The trimmings of the pavilion are in white and gold, with the entrance fronting on the main aisle. On one side are arranged the shoes in glass-covered cases, the shoes themselves being placed upon skeleton stands handsomely nickeled, so that each pair has a chance of being easily seen. The line of ordinary rubber shoes, tennis-shoes, and goods for every-day wear is very complete and finely arranged. In addition to this there are some beautiful tan shoes and some high-topped button boots in coachman's tan with rubber soles. On the opposite side of the exhibit is a case that is in itself one of the unique features of the exhibition,—the large glass show-case showing twenty-five varieties of crude India-rubber. These are not small samples, but large masses that give one a good idea of what the gum is as shipped from the hands of the various native gatherers. In addition to these there are the implements of gathering,—the machetes, paddles, clay-jars, etc. A still greater curiosity is a large sealed glass jar filled with genuine rubber sap, which Selling-Agent Paine managed to secure after many trials by sending to South America for it. An elegant office in the rear is provided for the accommodation of guests and customers, and is usually well occupied. The exhibit is in charge of Mr. W. S. Rawlings.

The American Rubber Co. are also among the exhibitors in the galleries of the Manufactures building. They have a fine position, the central platform being surrounded by cases in white and gold, where are displayed a great variety of fine mackintosh garments for ladies, gentlemen, and children. Twenty-six different garments are shown on forms, while others are grouped artistically in the cases. They show also fine lap-robes, the new English "fore and aft" mackintosh cap, and two or three healthy rubber plants,—the latter, by the way, coming to be a very necessary part of a rubber exhibit nowadays. They have shown in their exhibit only fine goods, the whole being in the care of Mr. James Shesgreen, who has become so fluent in answering questions that he really gives a daily lecture on India-rubber goods.

The Canfield Rubber Co. (New York), manufacturers of the Canfield seamless rubber dress-shield, have an attraction in Section G, No. 609, in the gallery near the middle aisle of the Manufactures building. Their exhibit does not cover as much space as that of some of the other rubber companies, but it contains a class of articles that do not require a great amount of room for their display. It is arranged within a small square open booth, beautifully carpeted and fitted up with writing-desk and easy chairs, especially for the accommodation of women visitors. Every variety and size of the Canfield dress-shield is here shown in boxes in show-cases to the best possible advantage. The booth contains a very life-like wax figure of the late Jared H. Canfield, inventor of the dress-shield, instructing a young lady (also represented in wax) how to make these goods. It is quite amusing to watch people go up to these figures with some question about the exhibit, and note the amazement depicted upon their countenances when they discover that they have been speaking to wax figures. There are also a crayon portrait of Jared H. Canfield; large engravings of the Canfield Rubber Co.'s factory at Bridgeport, Conn., and of the branch offices of the company in Paris, Hamburg, and Vienna. This exhibit seems to have been arranged distinctly for women, as no convenience is lacking for their comfort. A large register is provided, so that all who visit the exhibit may leave their names.

The Canfield Rubber Co. offer $1000 in gold or three free Cook's excursion tourists' tickets to Europe as prizes to their lady patrons. The lady who guesses nearest to the number of dress-shields sold by this company during 1893 can have her choice of a free trip to Europe or $500 in gold. The lady whose guess is second best may have either a free trip or $300, and the third best, a free trip or $200 in gold. The guesses must be mailed, prior to April 1, 1894, to the offices of the company, No. 73 Warren street, New York, and the tickets, or money, will be distributed on May 1. All answers to this proposition must be made on coupons supplied by the company. The three European trips offered are over different routes.

A. J. Tower, the well-known oil-clothing man, and treasurer of the Metropolitan Rubber Co., has a notable exhibit in the gallery of the Manufactures building. The goods shown are a light yellow grade of oil-clothing and black and are very handsomely finished. A figure on horseback clad in "slickers" forms the center of the exhibit, around which are grouped cases in which are hung the various styles of garments manufactured.

C. J. Bailey, of Boston, has an exceedingly creditable exhibit in the gallery of the Manufactures building. It is one of the few that every one passing seems to know something about. If they do not know Bailey, they do know some of the variety of his rubber brushes or have seen his Perfection rubber and water-tight sandal, and the way that they step up to the cases and examine the goods, telling what they know about them, shows what excellent advertising the exhibit is. The goods are very finely arranged, and an attendant is there all the time to explain their uses and to give any information that the passer-by may desire.

The Stoughton Rubber Co. have located their exhibit in the gallery of the Manufactures building. It consists of an extremely elaborate case in which are four central figures, each wearing the finest mackintosh garments that Superintendent Burnham is able to produce. About these figures is grouped a variety of mackintosh goods, all of which are very nicely displayed and are everything that could be desired in texture and finish.

The Metropolitan Air Goods Co. (Boston) show in the gallery of the Manufactures building rubber cloth-covered chair-cushions, pillows, and mattresses in various styles. An attendant explains the value of these cushions over those in general use.

One of the exhibits of the India-Rubber Comb Co. is located in the Transportation building and consists of a handsome rosewood case with glass sides about six feet high, where are displayed a great variety of rubber harness-trimmings, consisting of terrets, buckles, hames,

horse-combs, and a thousand and one articles in beautifully-finished hard rubber, both in red and black. The exhibit is attracting a great deal of attention among saddlery-hardware people.

In the gallery of the Manufactures building is another exhibit of the India-Rubber Comb Co., showing hard-rubber goods in the line of electrical supplies, druggists' sundries, and some fine goods in soft rubber in druggists' sundries. Their molded water-bottles in red and white are beautifully finished and attract a great deal of attention; in fact, all their soft-rubber work in syringes, bulbs, tubing, etc., shows a fineness of finish that is exceedingly creditable. All the hard-rubber goods are of course first class and shown in several different colors. Their shape and variety of uses are infinite.

The exhibit of the John A. Roebling's Sons Co. (Trenton, N. J.) is one of the most notable at the Fair. In the background is a magnificent painting of the Brooklyn Bridge, while just below is shown the ship *John A. Roebling*, and the great square fronting the picture is filled with wire and wire cables for manifold uses. On the side of the main aisle is the wire used for electrical purposes and insulated by various processes. A handsome case is filled with magnet-, annunciator-, and office-wires, wound on bobbins and reels and covered with braid and silk of all colors. A second case shows annunciator- and office-wire, and lamp-cord, plain, twisted, and braided, wound on reels and put up in neat coils. Beyond this are great drums of solid feeder wire, of the Roebling electric-light cable, lead-covered, the Roebling telegraph-cable, lead-covered, and the Roebling dry-paper telephone cable, also lead-covered. The center of the exhibit shows an immense drum similar to the one on which was wound the traction cable of the Third avenue railroad in New York. The weight of the cable is 142,000 pounds, its length 36,859 feet, and the diameter 1¼ inches.

A portion of the exhibit of the Washburn & Moen Manufacturing Co. is devoted to a display of various kinds of insulated wire. There is shown electric light wire on reels piled in pyramid form, railroad feeder-wire in cables, waterproof insulated wire, weather-proof insulated wire, the well-known "Salamander" wire, and magnet wire in all colors and sizes. They also show lamp-cord braided and twisted, in all the colors that silk or cotton covering can take. The main exhibit is given up to bare wire, of course, and is very handsomely decorated.

The New York Insulated Wire Co. have a magnificent exhibit of their product, in that they had the contract for most of the wiring in the buildings. The building in which their workmen stored their tools and prepared the work was far in the rear of the White City and had but a modest sign out bearing the name of the company. The curiosity-seeker hunted them up, however, and felt that he was cheated if he could not go through and see what was being done there, although the work was nearly finished.

The Safety Insulated Wire Co. (New York) have made no special exhibit at the World's Fair, but simply have a working exhibit in the wiring done by them.

The H. W. Johns Co., in the Mines and Mining building, show not only asbestos in its cruder forms, but also the machines for combing the fiber out and for weaving it into cloth. These machines are run at stated intervals and attract the intensest interest. One result of their weaving is shown in a handsome asbestos theater-curtain used as a background for the various goods displayed. Other samples of their work, such as sheet packing, pipe covering, core-packing, and indeed something from each line, into which their asbestos product goes, is shown. The Vulcabeston, which is a mixture of asbestos and rubber vulcanized together, a product of the Johns-Pratt Co., was also shown in various forms, and made an interesting part of the exhibit.

In the gallery of the Manufactures and Liberal Arts building the H. W. Johns Co. have a second exhibit, showing sheet-packing, core packing, boxes of asbestos fiber, and all kinds of asbestos paints. They also have a model of a boiler covered with a non-conducting compound of asbestos which they supply in vast quantities to manufacturers.

Johnson & Co., Thelford, Quebec, have an exceedingly fine case of asbestos showing long, fine fiber and apparently of the strongest possible texture. . . . W. H. Jeffrey, Danville, Quebec, has on exhibition in the Mines and Mining building a small case of asbestos of very fine quality. . . . W. B. Berry, of Quebec, shows asbestos in the natural state; also, sheet-packing and rope manufactured by himself. . . . The Walker Mining Co., of Canada, have an exceedingly interesting exhibit of Canadian graphite in a variety of forms.

ONE ADVANTAGE OF HIGH PRICES.

[FROM THE SHOE AND LEATHER GAZETTE.]

THE rubber industry may be pointed to as an instance of the influence of high prices in a beneficial way. The rises in price in crude-rubber at various times have been of extreme advantage to the trade in the vast amount of originality and ingenuity engendered. The higher the price of the crude material, the more ability is shown by the manufacturer to produce the same results with a less quantity of raw material. This does not imply a decrease in the quality of the goods. If this were a fact, there would be no gain. The rise in prices of India rubber may be regarded as the cause of the perfection and application of the processes of reclaiming old rubber scraps and reducing them to practically unvulcanized rubber again, to be used as the fresh article late from the forests. It is now a fact that many of the best wearing goods are those made from a combination of crude and reclaimed material. This same rise in price has also been productive of the more general use of cheap grades of African gum which formerly were unmarketable. There has also been a great deal of costly experimentation undertaken, with prices high, that would never have been attempted had fine Pará rubber remained at low prices, but which has been extremely beneficial to the world. By this means, the fine points in many coarse goods have been discovered and brought out, with immense saving to all. So with rubber substitutes. Large sums have been spent in experimenting for an acceptable substitute, and even now when they are plenty, and under various names are on the market, there is still a continuance of effort—and it is all due to high prices.

THE CRUDE-RUBBER TRADE OF AFRICA.

THE exports of rubber from the Portuguese province of Angola on the west coast of Africa are of considerable importance, amounting in value of late to about $2,000,000 per annum, three-quarters of which come through the trading station at Benguela and nearly all of the remainder at Loanda. Part of this rubber is found in the forests of the Kuanzu basin, but a large portion of it probably emanates from the French Kongo, while it is a native of all districts in that section of the world. Palm oil and nuts are found in abundance, and could be used for curing rubber were the native educated up to that process. The importance to Angola of the commerce derived from the rubber product can be calculated when it is stated to form more than one-third of the whole of the exports from the province.

A considerable portion of this rubber is brought down from Dondo to Loanda by the Belgian line of steamers, Dondo being situated a few miles beyond the boundary of Angola, and in the Kongo territory. A railroad has also been built a considerable part of the distance between Loanda and Dondo. Benguela, although being the larger commercial port, has not much direct facility for reaching the interior, but sailing craft skirting the coast keep it well supplied with rubber and other products for export. Generally the rubber is brought to the various landing places on the human back, arriving in caravans, but in the south the Boer with his substantial ox-wagon is found slowly making his way to the water-courses reaching Mosamedes.

Intercourse is had with England, Germany, France, and Holland by steamships belonging to the different nationalities. A peculiarity of the trade is that a certain grade of rubber called Almeidina—from the *Euphorbia arborescens*—is consigned from the interior to one trader at Mosamedes who sends it to Portugal alone year after year, where it loses its identity in the distribution of the world. This parcel amounts to about 20,000 pounds. One town in the interior far into the heart of the Kongo territory owes its existence to the rubber trade, the human caravans centering there, whence the product is floated to Dondo, already mentioned. It is now the starting point of German exploring expeditions. The coast rubber trade is principally in the hands of a Dutch trading company, with the unpronounceable name of "Niewe Afrikaansche Handelsrenootschap."

The rubber coming from Benguela is worth about fifty cents a pound in New York, while the Kongo sells for ten cents less. As part of this price is due to increased cost in indirect transportation it is possible that the new line of steamers between New York and Africa may gather in some of this trade and give a really good product a better foothold in this country.

RUBBER TIRES ON ENGLISH HIGHWAYS.

GREAT progress has been made in steam locomotion on common roads in England during the last two years. The traction engine is rapidly supplanting the portable engine for driving threshing and food-preparing machinery, and for drawing the apparatus behind it from farm to farm. A large number of locomotives are specially built for drawing loads, and some have been built for the conveyance of passengers. Recently, however, legislation has been enacted, at the instigation of horse owners, limiting the use of locomotives on highways, and placing strict limits upon the rate of speed used. This legislation, it happens, does not affect the export of road locomotives to the British colonies and some other foreign countries. In a paper in the *Engineering Magazine* (New York) Mr. William Fletcher, a mechanical engineer of England, writes at length in regard to the history of this form of locomotion, and the construction of the engines now in use. His description of the model road locomotive is of interest on account of the prominence which he gives to India-rubber as a factor in its construction. Among the desirable qualities mentioned in a locomotive for use on ordinary highways, is noiselessness, which is obtained by the use of India-rubber tires. There are other advantages in the use of this material, as indicated by this paragraph in relation to the Thompson locomotive:

"Whatever success was achieved by these road steamers was due mainly to the India-rubber tires, for it is impossible to ignore these; they act as an excellent spring, and are placed where the spring should be situated—that is, at the point nearest the road, thus saving the engine from a great amount of wear and tear and rough usage; they are perfectly noiseless; owing to their flexibility, they always possess a regular amount of surface of adhesion; the injury to the road may be said to be *nil*, for there never has been any complaint of damage done by them; and they enable a road locomotive to travel at a sensible speed."

Quick running, according to Mr. Fletcher, is out of the question unless the engine is mounted on springs. Although many spring-wheels have been introduced lately, few have survived. None of the wheels with elastic spokes answer as well as the India-rubber tires. A good form of spring-wheel as been used on some steam coaches "consisting of an iron boss and about one quarter of the quantity of India-rubber put around the boss of the same thickness as in the Thompson type. Impinging upon the India-rubber were blocks of wood endways of the grain held between two steel plates in which they could work in radial slots, and those blocks rested upon the road, affording the same flat surface that the Thompson tire did, and giving considerable tractive power."

Just as some of the people of London had begun to congratulate themselves upon the comparative noiselessness of the hansom cab having India-rubber tires, complaints commenced that there is danger in them for foot-passengers who cannot hear their approach in time to get out of the way, and are sometimes knocked down in consequence. Sir Edward Bradford has therefore given notice (according to the *India-Rubber and Gutta-Percha Trades Journal*) that these noiseless vehicles will not be licensed unless they are provided with bells, placed either on the vehicle or on the harness of the horse, in such a manner as to give pedestrians fair warning.

THE REQUISITES OF A GOOD RUBBER TIRE.

IN the building of pneumatic tires there are many conditions to be considered. There is so far nothing superior to air as a cushion. It is perfectly rigid, but an elasticity is formed by the impossibility of a perfect inflation of the tube, thus allowing the air to flow from the part under pressure over the wheel to its starting point. This action is very simple and natural, but a difficulty arises in finding a suitable envelop. An elastic substance must be used, otherwise the vibration would be too great, and the benefit of an air-cushion would be lost. So India-rubber is chosen; in fact there is practically nothing else to choose.

Then comes the make-up. The envelop must be strong enough to stand a pressure of sixty pounds to the square inch, and at the same time of such lightness as to allow the air in conjunction with it to act as a perfect cushion. It should be impenetrable, or provision should be made for closing punctures,—requirements difficult to meet. In the self-healing sorts now rapidly coming into favor it will be found that great care will have to be used in the vulcanization, or as age comes along to the tire an over cure or an under cure will rob the tire of its self closure.

The tire must be perfectly flexible and elastic longitudinally to secure easy depression of the tread and to return the part after depression. It must not be so elastic, however, as to allow an obstruction in the road to drive the tread of the tire to the rim of the wheel; neither must it be so much that the depression will cause the rider to be constantly working against an "up hill;" as is so conspicuous in the ordinary cushion tire; otherwise the factor of speed will not exist. There must be a maximum of air and a minimum of rubber and fabric. Then the fastenings should not be complex, and repairs should not be beyond the knowledge of the amateur,—quite the reverse of what is now the case, as repairs are generally beyond the capacity of the ordinary repair-shop.

To obtain such a tire there is a great deal in the rubber and more in the fabric. The first is a known quantity,—certain compounds will bring certain results; but the list of fabrics to use with it is very long and the great improvement will come with further invention and the investigation of a wide field of possibilities. The special material or materials will have to be found that are the best for the purpose, and then will come a special weave of them.

A discrimination will have to be made between the "racer" and the road-tire; the maximum degree of softness and lightness of weight used in the former will not be allowable in the latter. The tire business is now in its infancy, and a want of competition is not conducive to rapid strides towards the ideal one. Later on the field will be a remunerative one to the inventor who can stand head and shoulders above those who have gone before him.

THE USES OF RUBBER GLOVES.

WHEN Charles Goodyear sought to separate the branches of the industry that he had created, giving the right to manufacture shoes to one, combs to another, door-springs to a third, and so on, he allotted that of gloves to the appropriate party and remarked: "*There* is a business that will be second to none of the others." While Goodyear was a poor prophet in detail, still he would be surprised if he were living to learn that the rubber-glove trade of to-day amounts to $300,000 per annum, and that the company which he originally selected controls one half of it.

There are many uses to which these gloves are put, such as were not dreamed of in Goodyear's time. The use of electricity makes a call for them. The lineman who grasps a "live wire" without the protection of a long-gauntlet rubber glove courts death by electrocution. These gloves are made very strong,—some with a gauntlet thirty-six inches long.

Chemists, battery-men, and workmen who handle acids use a strong reinforced glove, white or black in color, and it is a good protection against all but the very strongest of chemicals. These are made in three lengths, without gauntlets, and with them in 4½- and 9-inch lengths. Ladies call for a good serviceable glove to be used in washing dishes, horticultural work, sweeping, etc., and men use the same in working around bee-hives. In the latter case the glove is a secure protection from the stings of the bee. These gloves are made in three colors—black, white and tan—and large quantities are sold.

Driving gloves are made heavy and are also used by workmen in the fur manufactories. These gloves are often wool-lined to give them warmth.

Plasterers use a heavy glove on the left hand in their work, and they are most convenient. The peculiarity is that the plasterer buys only one glove, to be used on the hand stated, and the manufacturer caters to this demand. Tanners use a great many gloves and for them a heavy article is made specially.

The ideal glove is that made for surgeons. It is of pure rubber, very elastic, so thin that the sense of touch is hardly obstructed, and is often made with gauntlets. Its chief use is to obviate all danger of blood-poisoning, but it is worn by many persons for the purpose of bleaching the hands. There are one or two other varieties, but not in common use. The principal manufacturers in the United States are the long-established Goodyear's India Rubber Glove Manufacturing Co., whose factories are at Naugatuck, Conn.

COTTONSEED-OIL AS A RUBBER SUBSTITUTE.

By Robert Grimshaw, M. E., Ph. D.

THE late Gen. W. T. Sherman is said to have got extremely tired of hearing "Marching thro' Georgia," which followed him from Dan unto Beersheba for thirty years; and on one occasion when a local band, intending to do him special honor, turned it on with full virulence, he is said to have ejaculated with a moan of distress: "Oh, that *darned* old tune again!"

Some of the cottonseed oil magnates feel about the same way concerning the sempervirent paragraphs as to the production of a rubber substitute at $1 a pound, from the seed-oil of the *Gossypium*. The story which goes the rounds, so often and so regularly, with no decrease in its enthusiastic praise of the successful inventor who has a fifteen foot fence about his substitute-factory, is much like the oft-quoted definition of a crab, "a small red fish that walks backwards"—which definition was admirable, except that the crab is not a fish, is not red, and does not walk backward. The cotton-seed-oil-rubber-substitute-high-fence million-dollars-a-year and all the rest of it would be reliable if true; but not being true, is not reliable. The officers of the American Cotton Oil Co.,—which controls all but about ¼ of 1 per cent. of the old American Cotton Oil Trust stock,—deny it *in toto*.

It is true that cottonseed-oil has been vulcanized after a fashion. The writer has done it, just as he and the present secretary of the Franklin Institute, William H. Wahl, Ph. D., vulcanized linseed and other oils, as far back as 1873; and the late Prof. Mowbray, of North Adams, Mass., of trinitroglycerin fame, was barking up the same tree; but as yet the *Ficus elastica* and its tall cousins have nothing to fear from the *Gossypium herbaceum* and its kindred.

So far the opportunities for utilization of cottonseed-oil far exceed the probable supply of what is after all but a by-product. It is possible, but not yet probable, that a short-lint variety of cotton may be cultivated for the cake and oil, and the fiber left out of the consideration; but so far the wooly part of the boll is too much in demand to neglect it, and the oil-supply will be proportionate to the fiber-crop.

Those who have had to deal practically with cottonseed-oil refining will recognize that it is a particularly "hard subject" and always seems to want to do the other thing, whatever it may be desired to do. To make good cottonseed-oil out of the crude oil without piling up a big bill for chemicals, fullers' earth, etc., and having soap stock in plenty for sale, is a hard enough task; but making India rubber out of the same intractable material seems sometimes like solving an algebraic problem with three unknown terms and only two equations.

CONDITION OF THE BICYCLE TRADE.

RUBBER-MEN say that the shrinkage in the purchases of crude by bicycle-tire men has been nearly 50 per cent. While much of this is undoubtedly due to the fact that the manufacturing season has practically terminated, the chief element in the situation is the overproduction of wheels with the new state of affairs that has come over the financial affairs of the country. A merchant who has been in a nervous state of mind during the day arranging to meet this and that piece of paper is in no mood to indulge in the extravagance of $150, more or less, for a wheel, and as about every one who has been at all energetic in business is now a little short, the bicycle man has become a peculiar sufferer.

The business of manufacturing bicycle-tires is comparatively a new one, so much so that only one or two of the largest and pioneer concerns have succeeded in obtaining a complete rubber plant as an adjunct to their factories. The business of making bicycles with the apparent manufacturers is largely one of specifications and assembling the parts. A company with a smaller or larger capital, generally the former, and with some knowledge of the push and go that have prevailed hitherto in the selling of bicycles, study the subject and then upon an experimental basis, more for the sake of variety or novelty than improvement, get one party to make the wheel, another the bearings, and a third the tires, and the demand has been of such a miscellaneous character that many a larger concern has found it to be of advantage to place itself in the anomalous position of making parts for a rival wheel. In such a case the employed party simply follow specifications, take the cash, and then smile at the page "ad" stating that the new tire is the best in the world and far superior to the old stand-by which the concern labors on day after day.

While these new men have no large plant to keep up, still they generally are people of small means. They have as a rule relied upon quick sales to make their settlements with the manufacturers and other creditors, and as there is a little hitch in the smooth working of such a scheme at the moment, a bad break in prices has occurred of $40, $50, and $60 in a machine. The break was led by the Springfield company, followed by the up-town New York con-

cern, and then a still farther reduction on cushion tires by one of the largest establishments in the country. This placed some of the companies who were forcing sales by adopting the instalment plan in a peculiar position. They could not cut prices without having a large proportion of their machines returned to them, and so they were compelled to sell their machines by auction sales. These auctions were further reinforced by the forcing of sales by somewhat distressed small dealers, and a demoralization has taken place. The demand for rubber by bicycle-men does not bid fair to be very large for the remainder of the year, for in the present state of uncertainty, the estimates for next year's supplies will be made with a large margin of safety on the side of poor business.

A VISIT TO THE MACINTOSH FACTORIES.

THE representative of a London trade journal who essayed recently a visit to the famous rubber-works of Charles Macintosh & Co., Limited, in Cambridge street, Manchester, found admission to the works impossible, under the rules of the establishment, though he succeeded in obtaining some information of interest from the secretary of the company.

Important as is the manufacture of macintoshes, the company's principal work is the making of the sheet rubber. They claim to be the only manufacturers in Europe who import their own rubber. They use Pará grades principally, paying for raw material some hundreds of thousands of pounds in the course of a single year. A large trade is done in the sale of crude rubber to other manufacturers after supplying the demand in their own works for sheet in the production of a large number of articles into which this form of rubber enters. So fine can these sheets be cut that with the thinnest goods it takes 150 sheets to form a layer one inch in thickness.

A large trade is done in tobacco-pouches, which are produced at the rate of 2000 for each working day. In this connection a recent improvement has been made. Formerly any monogram or lettering had to be sewed to the rubber, but by a new process initials or monograms are impressed on the pouch before it leaves the mill. The manufacture of pneumatic tires for bicycles has not been lost sight of by the Manchester firm. They take pains to keep up with the latest improvements in this field of manufacture. They have brought out an 1893 pattern of their detachable tire. One department of the mills is devoted to the manufacture of toy balloons and other fancy rubber goods in which the house is a strong competitor with French makers. They do a large trade in playing balls—the painted rubber variety—of which millions are made annually. Herein they compete with the German manufacturers who long had what was practically a monopoly of this trade.

The whole of the business is covered by patents. They date back to the original patent obtained by Charles Macintosh in 1823 for utilizing caoutchouc by dissolving it in coal oil or coal naphtha. They have taken out very many patents since that day, and by the time one expires another has been taken out on some improvement.

DON'T MIX RUBBER AND SILVER.

A GENTLEMAN who dropped into a rubber-goods store to make a purchase was offered some very black-looking silver half-dollars in change for the bill he threw down in payment. He looked at the change in such a dubious way that the cashier of the establishment laughed and remarked: "You have an idea, like others who come in here, that the money may be bad. Don't you know that the effect upon all silver money in a place like this is to turn it black? Even silver watches become so tarnished that it doesn't pay to wear them here. When you see black-looking silver money, it's even chances that it has been passed in a store like this. I know of a funny occurrence, but which was not so funny to a friend of mine who had a store up in the country. In a general store all sorts of goods are sold, from dry goods and groceries to wallpaper and silverware. Well, my friend put a lot of rubber goods in the same show-cases with a stock of silverware, and in a few weeks the latter looked so black and second-hand that he couldn't sell it for 50 cents on the dollar. He didn't know what was the matter until a well-posted drummer came along and gave him some advice, which was well heeded after that. If you have any new silver money you want to give an ancient appearance to, just leave it here for awhile."—*Denver (Colorado) Sun.*

WHICH IS THE CHEAPER COMPOUND?

ONE of the pioneers in the rubber business, who has experimented a great deal with various vulcanizing compounds, has figured out, to his own satisfaction at least, that sulphur, at 3 1/3 cents per pound was a more costly article to use in vulcanizing than hyposulphid of lead at 13 cents per pound. It may be of some interest to look at his figures. His first sulphur compound was as as follows:

5	pounds Pará rubber @ 80c.	$4.00
5	ounces Sulphur.	.01
2½	pounds Litharge @ 6c.	.15
3¾	pounds Whiting @ 1c.	.04
¼	pound Lampblack @ 20c.	.05
11⅛	pounds.	Total cost, $4.25

Multiplying both of these amounts by 2, making them more easily divisible, would make 23 pounds of compound, costing $8.50, or 37 cents per pound.

The hyposulphid of lead compound was as follows:

5	pounds Pará rubber @ 80c.	$4.00
1¼	pounds Hyposulphid of lead @ 13c.	.16
2½	pounds Litharge @ 6c.	.15
3¾	pounds Whiting @ 1c.	.04
¼	pounds Lampblack @ 20c	.05
12¾	pounds.	Total cost, $4.40

Multiplying each of these amounts by 4, to make them more easily divisible, would make the compounds weigh 15 pounds, costing $17.60, or 34½ cents per pound, which makes a very good showing for the "hypo" compound as far as the cost goes by weight.

AN ATTRACTIVE GUIDE-BOOK.

VISITORS to the United States this summer will be fortunate if they secure a neat little handbook published by the Brown & Sharpe Manufacturing Co. (Providence, R. I.) in connection with their display of machine-tools at the Columbian World's Exposition. It contains concise, intelligible "Suggestions in Regard to Living and Traveling in America," with reference particularly to information suited to visitors to the Fair. There are time-tables, maps of Chicago and the Ex-

position grounds, and a good bird's-eye view of the Exposition. A few pages are devoted to the history of the company, from their beginning on a small scale in 1833 to the present time, when they occupy four acres of ground, and in their large shops manufacture some 400 different machine-tools, besides innumerable small tools. Their exhibit is in Machinery Hall Annex, center aisle, left hand side passing from the main hall—Section 13, Crane columns J, 46 and 47. The chief characteristic of the tools manufactured by this firm is accuracy. The first great impetus was given to their business by the demand for facilities for manufacturing sewing-machines in large numbers.

GLEANINGS FROM CONSULAR REPORTS.

THE exports from Manchester, England, to the United States, of elastic web and India-rubber thread, reach important proportions, as shown in a report by Consul William F. Grinnell for the year 1892:

Period.	Value.
Quarter ended March 31	$ 41,795 08
Quarter ended June 30	19,259 11
Quarter ended September 30	26,242.99
Quarter ended December 31	32,718.70
Total	$120,015.88

A considerable falling off in the exports of India-rubber from Mexico is indicated by the official figures quoted by Consul-General Warner P. Sutton, writing from Nuevo Laredo, values being stated in Mexican currency:

Year ending—	Value.
June 30, 1883	$159,883
June 30, 1887	179 530
June 30, 1892	47,584

The new Mexican tariff rates are noted in a report sent by the United States Minister to Mexico, the Hon. Thomas Ryan. Among the changes, "rubber belting for machinery when imported attached to machinery" is taken from the free list and made dutiable at 1 cent per kilogram (=2.26 pounds), gross weight.

Writing from Bermuda, Consul W. K. Sullivan says that the leather and rubber goods in all forms used there are of American manufacture. The situation is different in Argentina, however. Our rubber-goods trade with that country in 1891, according to Consul E. L. Baker, consisted in the exportation of Gutta-percha manufactures to the value of $29.

A RUBBER DOLL'S LONG JOURNEY.

THE practice of sending postal cards around the world is not an unusual one, but it is not often that a rubber doll is sent traveling all over the continent. The other day at Ottawa, Ont., there arrived from the Pacific coast one of these articles, to which all kinds of tags and badges were attached in addition to the customary female attire. Judging from the history written on the tags, the little one has undergone considerable traveling. Last fall this doll, which bears the name of Miss Mary Green, was dropped into the mail at Winchester, Mass., bearing a tag on which were the words: "The climate of New England is too severe for the child. Please pass her to the Pacific coast for the winter." This began her travels, and since then the doll has been continually on the move. She attended a mail clerks' banquet in Denver, where she got a complete new outfit in the clothing line. On she went, stopping for a short time in Montana and California, then up to British Columbia and from thence east to Winnipeg, and Ottawa. Her skirts bear hundreds of postage marks by the different mail clerks whose hands she has passed through, while around her neck are tags bearing the efforts of budding poets. One of the Ottawa tags is a pass to the House of Commons gallery, but as the House is not sitting it bears the words "Come again." The newspaper badges which she carries are thirteen in number and embrace Kansas City papers, Colorado, Montana, California and British Columbia sheets, and on each one is printed a kindly greeting to the little one and a fond farewell. The "maid" went home to Winchester after a short stay at Ottawa.

THE DOG AND THE BICYCLE.

A BROADWAY car bowled past Grace church on a Sunday afternoon. A man stood on the back platform, turning every little while to encourage a big dog which trotted along behind the dashboard and apparently didn't mind the speed at all.

Sundays bicyclers infest Broadway and seem to find the broad iron strip for the cable a beautiful roadway. Behind the panting dog on the car-track was a pneumatic-tired bicycle. The rider sometimes got unpleasantly near the big dog, who barked vociferously to show his displeasure, but the wheel kept close to his heels.

Whether the dog knew the sort of tire attached to the wheel or whether he didn't will probably never be known, but as the car slacked up at Thirteenth street the canine turned, and stepping aside, made a vicious snap at the slowly revolving wheel. His sharp teeth punctured the tire, the pressure drove out the air, and the rider found himself with a collapsed tire and a useless bicycle. By the time the rider discovered what had happened, the dog, relieved of his pursuer, was half a block away. The wheelman took to the sidewalk and pushed his machine home.—*New York World.*

THE TAXATION OF BICYCLES.

COLONEL ALBERT A. POPE, under a letter-head of the "Pope Manufacturing Co.—Largest Makers of Bicycles in the World," is sending out a circular prompted by the proposed taxation of bicycles in Lowell, Massachusetts, and Paris, France, strongly protesting against thus handicapping the wheel, and giving his reasons therefor. Not only is the bicycle a useful machine to many persons unable to bear more than their present tax burdens, but the introduction of bicyles has done much to influence the improvement of the roads, thus tending to advance the general welfare. Instead of taxing bicycles therefore, Colonel Pope feels that it would be more equitable to pay a bounty to their owners, because of the good work they are doing in the betterment of the highways.

GOOD RESULTS FROM MAGNOLIA METAL.

THE following letter is self-explanatory:

FALL RIVER LINE, BETWEEN NEW YORK AND BOSTON.
On Board Steamer "Plymouth."

NEW YORK, April 29, 1893.

Magnolia Anti-Friction Metal Co., New York.

DEAR SIRS: In answer to your inquiry as to our experience with the Magnolia Metal, we desire to say that we have it in the intermediate crank-pin brasses of the *Plymouth*, and it has given us every satisfaction, and from our experience with it we cheerfully recommend it for such work. Yours very truly,

B. J. BENSON,
Chief Engineer, *S. S. Plymouth.*

INDIA-RUBBER SCRAP.

THERE is a great diversity of opinion among engineers as to the use of India-rubber for cores in gland packings, but the criticism arises from the fact that they are often imperfectly made, and again an inferior quality of rubber is employed. Poor rubber is detrimental to packing. Remove these two drawbacks and much can be said of the value of India-rubber in this class of packings.

* * *

THE *Journal of the Society of Chemical Industry* contains an article on balata, which, according to that journal, is superior to Gutta-percha, possessing a greater elasticity and being less soft at the ordinary temperature and less hard in the cold. It possesses also more resistance to the action of light and air. It is obtained from the milky juice of the "bullet" tree, in Guiana, as a caoutchouc-like mass, which can be kneaded at a temperature of 49° C. and melts at 149° C. The price of the crude product quoted by the *Journal* is 4*s* per gallon and that of the pure dry article is 1*s* per pound.

* * *

A "DEPARTMENT" store in New York advertised last month some rubber goods at very low prices, to wit:

Caps—Gossamer rubber, 9 cents; check rubber, 13 cents; tan, red, or blue rubber, 21 cents.

Hats—Check rubber, 49 cents; red, blue, or tan rubber, 49 cents.

All the above are bathing articles, and presumably large quantities were sold to pay expensive advertising bills, if no more.

* * *

ONE of the old-school druggist's-sundries men refers to the time when syringe-bulbs brought from 24 to 27 cents each and rubber tubing was $1.75 a pound. It makes one sigh for the old times and the old prices.

* * *

IN the ball-racks in bowling-alleys there are now placed large rubber pads, so that the heavy lignum-vitæ balls, when they return to the roller, do not shake the whole building as they come in contact with the post.

* * *

IODOFORM is a peculiar drug of remarkable curative qualities, but the odor is something wonderful. Everything with which it comes in contact will absorb the powder, and give out the odor for weeks, and for this reason physicians prescribe it with hesitation, and generally consult the tastes of the patient in advance. The druggist's-sundries men have made a vehicle for its conveyance to the desired part, which is a cylinder shaped like a pepper-box with similar perforations and through the latter the powder is sifted to the wound or sore. This box is made of hard rubber and its office is to keep the powder from coming in contact with anything but the intended object.

* * *

THE jar-ring business this season promises to be more lively in competition than in volume. Fruit has had a late start, and the result is handicapped; in the meantime compositions are quoted much lower than last year.

* * *

IN an interesting paper on the position of American hardware in Australia, furnished by the Alfred Shaw Co., of Brisbane, to the *Iron Age* (New York), there are some mentions of rubber goods. It is stated, for instance, that the American manufacturer has the virtual monopoly in that part of the world in wringers; that he does a small part of the trade there in rubber hose; but that he is so far "out of it" in bicycles and rubber sheet.

THE sport of canoeing is as yet young, but rubber-men have been for some time selling the canoe-bag, which is used as a protection for the clothing and other articles while *en route*. They are similar to the "Navy" bag, used for camping outfits, only the canoe article is without handles and is plainly made. It is shaped like a mail-bag.

* * *

RUBBER-MEN generally disclaim any interest in the barytes trade, but perhaps the foreigner would care to learn that Durgin, Weinmann & Co. are about to establish a mill for the manufacture of bartyes at Lynchburg, Va.

* * *

THE patentee of the collar used on the mackintoshes of the American Rubber Co. derives, it is said, an income from the royalties thereon of $4000 a year.

* * *

WONDERFUL, INDEED!

[FROM "PUCK."]

HOFFMAN HOWES (to UPSON DOWNES, who wears a Mackintosh)—Why, Upson, the last time I saw you wear that coat it was raining, too!

THE first balloon—the "Humboldt"—constructed for and used by the engineer corps of the German army for the purposes of field exploration having been destroyed by an explosion, an order has been placed for a "Humboldt substitute," with the Continental Caoutchouc and Gutta-Percha Co., at Hanover. The order has been made by the German Association for the Promotion of Air Navigation, for delivery during this month. It is expected to thus render the German army-equipment in this specialty, as in all others, independent of foreign countries, the "Humboldt" having been imported. Although the "Humboldt" experienced some disappointing trips, the results on a whole gave sufficient encouragement both to the army officers to engage in further experiments, and to rubber-manufacturers to keep an eye on the requirements of balloon construction. The aeronautical corps at Berlin covers rubber objects exposed to the sun and weather with raw linen, which prevents change in the rubber, even under exposure for months.

* * *

THE reason why Portuguese colonies favor the mother country in exports of crude rubber is that there is a discrimination in export duties in favor of the latter large enough to make it profitable to do so.

* * *

A FORMULA for testing the blackness of lampblack is given by Samuel Cabot, a well-known Boston chemist and manufacturer of a superior grade of black, as follows: Take twenty parts of white lead to two parts of black, dry; drop a little oil on it, and mix with a spatula on a glass plate. Place the black to be

tested by the side of this, mixed in the same manner, and if there is a difference in the strength of the color it will be very apparent. Mr. Cabot claims that he furnishes a black for the rubber trade that is 30 per cent. stronger than any other.

* * *

THE invention of rubber hose, or tubing woven in a circular form without a seam, is ascribed to T. B. Brown, who brought it out in 1849, but it seems that he was anticipated by Hegner as long ago as 1792. Before that time flexible tubing was prepared from strips of leather fastened together by metal rivets, or by winding thin bands of linen or other fabrics, soaked in gums or varnishes, around a mandrel or core.

VERY few rubber goods are exported from the United States to Peru, the bulk coming from England and France. Germany sends most of the "ponchos" used in that country.

* * *

SALOON-MEN and brewers use large quantities of small tubing in lengths of twelve feet. The brewer will take a half-dozen of these lengths, thrust them into a tank of beer, and deftly start a-siphoning into six kegs in so many motions. These tubes, for which there is at present no practical substitute, are well made and thoroughly soaked in stale beer before using, to eliminate the odor from them. While there are great quantities of these used, profits on them are now very small.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 497,830.—Tire for Cycles. Louis K. Siggons, Philadelphia, Pa.

The improved tire consisting of an inflatable tube, and a lining for said tube composed of an eccentric series of layers having their edges free and arranged out of alignment or so as to break joint.

No. 497,831.—Pneumatic Tire for Wheels. Enoch Siltberg, York, England.

In attaching tires to wheels the combination of slotted or slit tubes with a rim having the edges thereof adapted to fit the said tubes and an outer covering having beaded edges.

No. 497,965.—Tire for Bicycles. Herbert S. Owen, Washington, D. C.

A wheel tire provided with a plurality of fluid-containing chambers one within the other and a plurality of valved changing or filling tubes, one within the other, the valve of the outer tube being hollow so as to provide a passage way through said valve to the inner chamber.

No. 497,966.—Wheel for Bicycles. Herbert S. Owen, Washington, D. C.

A wheel for bicycles and other vehicles provided with a fluid-containing tire having an elastic inner periphery and a tread portion, a space being provided for the expansion of said inner periphery beyond its normal limit and interlocking shoulders or flanges upon the tire and wheel preventing the tread portion of the tire from being forced out of place.

No. 497,971.—Pneumatic Tire. Pardon W. Tillinghast, Providence, R. I.

A pneumatic tire, composed of an inner rubber air tube, covered with fabric, and having its original ends connected by means of an internal rubber bushing, and the joint strengthened by an outer layer or winding of fabric, and an outer rubber covering inclosing the original tube and its strengthening layer, all the parts being vulcanized together, forming an integral tire.

No. 497,995.—Wheel-Tire. Frank W. Tucker, Winthrop, assignor of one-half to Ferdinand F. French, Winchester, Mass.

A wheel-tire comprising in its construction a felly or rim having grooves in two opposite sides, a metal tire on said felly, an elastic tire fitting over said metal tire and reduced in thickness toward the outer edges, said reduced portions engaging the grooves in the felly, and clamping bands holding the reduced portions of the elastic tire in the grooves and secured to the felly.

No. 498,373.—Vehicle Wheel. George R. Williams, Brooklyn, N. Y.

The combination with the flexible tubular tire, of the independent cells of flexible material therein, an annular metal tube having communications with each of said cells, a valve through which air may be supplied to the cells, and the flexible tube for simultaneously closing the communication between the metal tube and all of the cells.

No. 498,479.—Vehicle Wheel. Michael F. Meisch, Rochester, N. Y.

A wheel for bicycles, the rim of which is concaved outwardly, and provided with substantially radial grooves parallel with the edges thereof and with each other, said grooves being substantially semi-rectangular in cross section, and the tire of the wheel is composed of a shoe of unequal thickness and longitudinally divided along its thin side and having its edges chamfered to overlap each other between the grooves of the tire and form a joint, said shoe having two ribs, one near each edge and adapted to form a radial projection when the tire is in place and to fit within the grooves of the tire of the rim, a sheet of cloth secured to the inner face of the shoe, and an air tube within the tire for inflating the tire and causing the ribs upon its surface to enter the grooves in the rim and hold the tire in position.

No. 498,667.—Wheel-Tire. Henry A. Lozier, Cleveland, Ohio.

In a wheel-tire, the combination of a rim having locking flanges and contact points in different planes both horizontally and vertically, a pneumatic tube, and a covering therefor having flanged or enlarged edges inserted between said locking flanges and contact points and there locked or released according as the pneumatic tube is inflated or deflated.

No. 498,777.—Pneumatic Tire. William C. Fisher, Middletown, Conn., assignor to George R. Bidwell, New York City.

A pneumatic wheel-tire having in combination with an inner expansible air-tight tube an enveloping jacket surrounding said tube and free to move thereon and formed of threads braided into a tube in such a manner that said tubular braided jacket will expand freely and at the same time contract in length.

No. 498,794.—Pneumatic Tire. Frederick W. Huestis, Boston, assignor to George E. Crafts, Newton, Mass.

In bicycles a semi-tubular rim forming part of a wheel provided with undercut grooves circumferentially upon each side of a median line drawn on the inner periphery of said rim, and an air-tight tube adapted to be contained within the outer concave periphery or the rim, combined with a flexible cover adapted to be drawn over about the rim, and separable metallic rings affixed longitudinally upon the side edges of the cover and arranged to engage the rim along a median line on the inner periphery of said rim.

No. 499,174.—Pneumatic Tire. Lucius J. Phelps, Passaic, N. J., assignor to the Phelps & Dingle Manufacturing Co., same place.

The combination with a wheel rim, of a pneumatic tire mounted on said rim and having an inflated nipple of elastic material extending through said rim and containing a body of material adapted to permit the passage of an inflating needle

and close the punctures produced by the same, and a cap of rigid material secured to the rim and inclosing said nipple.

No. 499,574.—Pneumatic Tire. Charles H. Pagett, Oxford, Ind.

In a velocipede or other wheel, the combination with the felly having a series of apertures therein, of the endless rubber tube having a continuous air chamber, the concavo-convex protector of braided wire or wire cloth imbedded in said tube between the air chamber and the periphery, the wire rod having an eye formed at one end through which the other end passes, so that said ends over-lap each other, the screw threaded eye bolts through which said rod passes, which pass through the tire and the apertures in the felly and the securing nuts.

No. 499,600.—Pneumatic Tire. Walter Sherboudy, Akron, Ohio.

A pneumatic tire composed of an outer tube of one or more layers, an inner air-tube cemented to the interior of the outer tube on the "tread" half and separated therefrom on the "rim" half, forming two air-chambers, and means for inflating either.

DRUGGISTS' SUNDRIES.

No. 497,757.—Vaginal Syringe. Foster E. Ackley, Hamilton, Mo.

In a syringe, the combination, with a concave oval shield having a concave posterior rim and an opening at its minor focus, of an exterior tube secured in the opening and provided with radial holes just above the shield, and an interior tube revolvable within the exterior tube and having radial holes arranged to be brought into register with the radial holes of the exterior tube.

No. 497,994.—Nursing-Bottle Nipple. Louis B. Truslow, Milburn, N. J.

As an article of manufacture, a nursing bottle nipple of soft rubber comprising a cap adapted to fit outside the mouth of the bottle, a laterally curved neck and head all in one piece, having its lower level at or below the level of the bottle neck, whereby the milk may flow without obstruction through the neck of the bottle and thence downward to the tip of the nipple.

No. 498,760.—Syringe. Gabriel Bay, Port Marly, France.

In a syringe the body of its liquid receptacle, in combination with an elastic diaphragm covering the same, a push-button bearing against the said diaphragm, a cam-flange and pointer carried by the stem of the said push-button, and a fixed part of the syringe under and against which the said flange turns, in order that rotation of the said button may depress the said diaphragm to regulate the contents of the said receptacle.

ELECTRICAL APPLIANCES.

No. 498,757.—Insulated Conductor. Thomas F. Attix, Brooklyn, N. Y., assignor of one-third to Henry C. Hulbert, same place.

The combination with an insulated electric conductor, of an inner tubular coating tightly braided about the exterior of the insulated conductor and treated with waterproof material and a second tubular coating tightly braided about the exterior of the inner tubular coating and treated with fire-proof material.

SADDLERY GOODS.

No. 497,858.—Anti-Rattler for Thill-Couplings. Harman Bunker, Barrie, Canada, assignor of one-half to James Herbert McKeggie, same place.

The combination with a thill iron, of a wedge provided with a shank and a rubber loop extending on each side of said wedge.

MECHANICAL GOODS.

No. 498,780.—Hose-Fastener. Robert Franken, Pomona, Cal., assignor of one-half to William L. Johnson, same place.

A hose-clamp formed of a single piece of metal and formed with a tongue and socket at one end and a cross portion to support said tongue, and a tongue at the other end, and a pin rotatably held in said sockets and adapted to engage the last-mentioned tongue and draw the clamp around the hose.

No. 499,366.—Rubber Packing-Ring or Gasket. John J. Voorhees, Jersey City, N. J.

A packing, consisting of a rubber or similar tube in ring form, having a continuous flexible movable core projecting to form a tongue, at one of the meeting ends of the tube of which the ring is formed, said tongue being adapted to fit into the second of said meeting ends of the tube, whereby a strong packing and a good joint are provided.

No. 499,472.—Conveyor-belt. Thomas Robbins, Jr., Morristown, N. J.

As an article of manufacture, a conveyor belt consisting of a backing, and a facing secured thereto and provided with a raised or thickened central portion and thinner or attenuated side portions, the said thickened portion being beveled or tapered down into the said thinner or attenuated side portions, whereby the life and wear of the belt may be increased to the maximum for a given amount of facing material.

BOOTS AND SHOES.

No. 497,821.—Scouring Wheel for Boots and Shoes. William H. Roche, Portland, Me.

In a machine for scouring heel and sole edges, the combination with a jaw having a groove in its periphery, one wall of which is higher than the other, a screw threaded projection on the side having the lower wall and a clamping jaw adapted to be screwed on said projection against said lower wall, of a hollow rubber ring seated in said groove and a circular covering having a narrow line of abrasive material and free edges.

No. 499,241.—Overshoe. James O. Mattison and Leroy M. Phillips, Youngsville, Pa.

The combination with a shoe having a continuous or unbroken opening for the entrance of the foot, of a spring arranged along the edge of the opening and extending across the instep and thence rearwardly toward the heel along both sides of the opening and normally pressing the sides of the opening inwardly toward the foot of the wearer.

MISCELLANEOUS.

No. 498,877.—Armpit-Shield. Mary J. Butler, Peoria, Ill.

A dress-shield comprising a body portion and an arm portion, open at the shoulder, and having at the sides separate loops or straps adapted to pass over the shoulder and engage a fastening on the outer garment, the body portion being provided along its edges at intervals, with fastening devices adapted to engage corresponding fastening devices on an undergarment or corset.

No. 498,863.—Bottle Filling Device. Joseph H. Stallings, New Orleans, La.

A filling device comprising a main tube formed with an outlet pipe, a collapsible bulb on the outer end of the main tube, a valve to close the outlet pipe, a flexible tube on the inner end of the main tube, an air-pipe in the main tube and extending upward at the inner portion thereof, and a packing around the main tube behind the outer open end of the air-pipe.

No. 499,185.—Printing Roll. David Engel and Joseph Koob, Brooklyn, N. Y.

The method of making seamless rubber printing rollers, consisting in engraving the design upon a roller, closely wrapping a sheet of rubber around the engraved roller, vulcanizing the sheet on the engraved roller, stripping off the seamless rubber tube produced and reversing it at the same time, so as to bring the design surfaces on the outside.

No. 499,354.—Composition of Matter as a Substitute for Hard Rubber. James De S. Brown, Philadelphia, Pa., assignor to himself and Henry Ayres, same place.

The composition resembling hard rubber and consisting of bitumen and sulphur, with fine filling, as lead peroxide for example, and gum camphor incorporated with said bitumen, and toughened and hardened by heat.

TRADE-MARKS.

No. 23,124.—Fire-Hose and Woven Fabric of which it is Composed. New York Belting and Packing Co., Limited, New York city.

Essential feature, the word "Leatherite." Used since October 20, 1892.

SOME RUBBER FACTS IN FIGURES.

THE appearance of the regular Treasury Department publication showing the details of imports and exports by the United States for the fiscal year ending June 30, 1893, makes it possible to present here comparative statements for the past four years:

	1890.	1891.	1892.	1893.
India-rubber:				
Imports (pounds)	33,842,374	33,712,089	39,976,205	41,547,680
Exports	330,032	1,041,300	1,600,834	1,072,369
Net imports	33,512,342	32,670,789	38,375,371	40,475,311
Gutta-percha:				
Imports (pounds)	(a)	960,835	308,239	582,378
Exports	(a)	51,950	8,557	18,716
Net imports	(a)	908,885	299,682	563,662
Manufactures—Imports:				
India-rubber (values)	$ 367,647	$354,645	$371,580	$338,435
Gutta-percha	(a)	(a)	61,276	81,173
Total	$367,647	$354,645	$432,856	$419,608
Manufactures—Exports:				
Boots and shoes (values)	$149,055	$141,679	$183,570	$ 252,391
All other—Domestic	941 252	1,094,764	1,232,497	1,357,015
Foreign manufactures	5,460	2,263	109	13,781
Total	$1,095,767	$1,238 706	$1,416,176	$1,623,187

[(a) Included in the item of "India-rubber".]

It will be seen from this table that the increase in net imports of crude India-rubber, counting from 1890, has been 23 per cent. The increase during the same period in the total exports of manufactures of India-rubber and Gutta-percha has been 46 per cent.

THE RUBBER MOVEMENT AT PARA.

THE figures in the tables appended have been compiled in the office of the INDIA RUBBER WORLD from data received monthly through the courtesy of Messrs. Norton & Co., of Pará, and kept on file. The table shows the amount of rubber received at Pará during the first half of 1893, with the shipments to the United States and Europe, and amount remaining in stock at Pará. All qualities are expressed in pounds:

MONTHS.	ARRIVALS.	SHIPMENTS.		
		United States	Europe.	Total.
Stock	1,707,200	.....	.....	.....
January	3.300,000	2,202,200	1,386,000	3,588,200
February	6,600,000	2,620,200	748.000	3,368,200
March	4 840,000	4.015,000	1,738.000	5 753 000
April	2,365,000	2,413,400	1,504 800	3.918,200
May	1,826,000	1,544,400	1.126,400	2,670,800
June	1,914.000	1,091,200	1,091.200	2,182,400
Totals	22,552,200	13,886,400	7.594.400	21,480,800
	21,480,800			
Stock	1,071,400			

Reference to the statistics for former years will show that the shipments for the half-year under review are more than one-half as large as the heaviest exports for any full year on record. The total exports, in round numbers, for five years preceding were 33,000,000 pounds for 1888; 34,000,000 for 1889; 36,000,000 for 1890; 39,000,000 for 1891; 40,000,000 for 1892. The figures for six months, in the above table, would indicate, for 1893, the greatest total amount of exports on record.

PARÁ STATISTICS FOR JUNE.

[By courtesy of NORTON & Co.]

	Pounds.	Pounds.
Stock on May 31	1,339,800	
Receipts during June	1.914,000	3,253,800
Exports—United States	1,091,200	
Europe	1,091,200	2,182,400
Stock on June 30		1,071,400

BRITISH RUBBER STATISTICS.

FROM the accounts relating to the trade and navigation of the United Kingdom, compiled at the Custom-House, the following figures have been gleaned, showing the quantities and values of imports of crude India-rubber and Gutta-percha for the periods specified:

	INDIA-RUBBER.		GUTTA-PERCHA.	
	Pounds.	Value.	Pounds.	Value.
June, 1893	2,425,360	£230,878	367,248	£22,978
June, 1892	1,934.800	161,846	349,552	44,439
June, 1891	3,012,576	329,245	490,784	47,036
Six months, 1893	15.832,208	1,638,481	2,017,568	148,590
Six months, 1892	16,360,738	1,601,333	2,923,200	333,087
Six months, 1891	17,236,016	1.955,198	4,044,768	437,795

The exports for the same periods were:

	INDIA-RUBBER.		GUTTA-PERCHA	
	Pounds.	Value.	Pounds.	Value.
June, 1893	1,544,256	£154,896	101,920	£11,780
June, 1892	1,455,216	136,111	123,536	6,523
June, 1891	989,296	124,345	64,960	7,042
Six months, 1893	8,439.536	802,112	532,784	48.355
Six months, 1892	8,280,272	759,362	422,800	31,044
Six months, 1891	8,002,848	833,710	467,488	37.431

From this it would appear that the consumption of India-rubber in Great Britain has decreased, as more clearly indicated in the following comparison:

	Imports.	Exports.	Consumption.
Six months, 1891	17,236,016	8,002,848	9,233,168
Six months, 1892	16,360,738	8,280,272	8,080,466
Six months, 1893	15,832.208	8.439.536	7.392,672

The exports of manufactures of India-rubber for the first six months of 1893 and for the corresponding periods in 1891 and 1892 are shown to have been of the value stated:

Six months, 1893	£583,067
Six months, 1892	588,180
Six months, 1891	608,258

No separate statement is made in the official statistics under review of the quantity or values of British imports of manufactures of India-rubber.

FRENCH RUBBER STATISTICS.

THE official returns of French trade for the first six months of 1893 contain some items with regard to the trade in crude and manufactured rubber upon which are based the figures below. The imports of crude India-rubber and Gutta-percha (in pounds) and the value of the same (in francs) are thus stated for the months of January to June inclusive, in three successive years:

	1891.	1892.	1893.
All arrivals	5,281,566	4,413,723	4.599,320
Deliveries for home consumption	4,270,667	3,469,206	3,717.560
Value	12,237,838	9,713,778	10,409,168

In the succeeding table of imports and exports of manufactures of India-rubber and Gutta-percha, only the weights are

given. The figures will be sufficient, however, to indicate in which branches of the trade there has been an increase or a decrease, in the comparison of January–June, 1893, with the same period of last year. The weights are in pounds.

	IMPORTS.		EXPORTS.	
	1892.	1893.	1892.	1893.
Unvulcanized sheets and vulcanized threads	312,180	315,480	68,508	60,295
Elastic tissues	123,200	173,800	590,040	580,663
Overlaid tissues	63,580	10,340	36,520	31,259
"Card" tissues	31,240	56,760	.....	.....
Made-up clothing	13,860	9,240	24,860	10,410
Footwear	103,840	166,980	108,460	119,020
Belts, Tubes, etc.	268,620	330,400	323,620	265,482
Total	916,520	1,063,000	1,152,008	1,067,129

The trade reports show France to be a heavy importer of rubber manufactures from England, the value of such imports for the last six months having been 2,956,000 francs, and for the same period of last year, 2,821,000 francs.

GERMANY'S FOREIGN RUBBER TRADE.

THE importation by Germany of crude India-rubber and Gutta-percha for the first five months of 1893, as officially reported, shows a slight increase over the same months for 1892. The figures given express quantities in pounds:

	1892.	1893.
Imports, January–May	4,025,780	4,455,220
Exports for the same period	852,280	920,260
Net imports	3,173,500	3,534 960

The exports of manufactures of rubber are shown in the table below, for corresponding periods in the two years, all figures relating to pounds:

	January–May.	
	1892.	1893.
Hard Rubber in Mass	33,660	16,060
Rubber Threads	112,220	109,120
Coarse Soft Rubber Goods	905,300	1,025,860
Fine Soft Rubber Goods	914,320	996,556
Finished Hard Rubber Goods	408,980	390,500
Rubber Toys	341,660	305,800
Tissues Woven with Rubber	311,300	295,460
Elastic Hosiery	12,980	12,320
Waterproofed Hempen Tissues	69,080	176,800
Unclassified Wares	226	2,480
Total	3,109,726	3,030,956

With regard to the imports of manufactures of rubber, there was a notable increase in figures for the first five months of 1893 as compared with the same period of the preceding year.

RUBBER-GOODS EXPORTS FROM NEW YORK.

THE figures herewith express the values of rubber goods exported from the port of New York during the four weeks ending July 25, 1893, as declared at the Custom House. It may be mentioned that the exports from New York amount usually to about 53 per cent. of the total exports of rubber goods from the United States.

To—	Value.	To—	Value.
Antwerp	$ 321	Glasgow	$ 807
Argentina	92	Hamburg	1,288
Australia	2,147	Havre	1,400
Berlin	150	Hayti	71
Brazil	972	Hull	70
Bremen	955	Japan	3,874
British Africa	111	London	1,053
British Honduras	53	Liverpool	600
British W. Indies	80	Mexico	712
Central America	119	Newfoundland	10
Chili	895	New Zealand	840
Christiania	13	Peru	212
Colombia	927	Philippines	15
Copenhagen	554	Porto Rico	331
Cuba	1,107	Rotterdam	3,841
Danish W. Indies	23	San Domingo	44
Derby	37	Southampton	10
Dutch W. Indies	26	Venezuela	307
Ecuador	97		
French W. Indies	6	Total	$24,070

The exports of crude India-rubber during the same period amounted in value as follows:

To—	Value.	To—	Value.
Amsterdam	$ 1,117	Liverpool	53,676
Antwerp	2,105	London	16,924
Genoa	279	Southampton	28
Hamburg	85,789		
Havre	1,317	Total	$161,235

There may also be mentioned shipments of India-rubber scrap to Liverpool to the value of $2206 and to Glasgow to the value of $1392.

VIEWS OF RUBBER-MEN ON TRADE PROSPECTS.

WILLIAM LINCOLN SAGE, the Boston rubber-shoe dealer, said of the business situation, in a conversation with a INDIA RUBBER WORLD representative: "It is the most peculiar condition that the rubber-shoe trade has ever known. There are no stocks on hand among manufacturers, jobbers, or retailers. Jobbers are giving light orders, and retailers are more than backward in buying. If there should be an average winter there will not be enough goods to go round. It is impossible for the factories to run light for several months and then jump in and supply the demand suddenly. When the call comes from the retailers, *they will all want their goods shipped yesterday*, and they will find themselves in the midst of a famine. Personally I will not pile up goods, and yet I know that I haven't one-quarter of what I shall need. Then, too, I don't know who it is safe to ship to. Here is a man rated splendidly, whom I would have sold $5000 worth of goods to without question if he had only wanted them, and he fails this morning. It is strange how the general doubt affects the men whose interests are not touched by the general financial condition. A customer of mine from Vermont was in this morning. He sells perhaps twenty cases of boots a year, is located in a county town, and sells to the farming trade. His call for boots this year will be just the same as usual, or, even suppose it drops, it will not be lessened more than 25 per cent. He has read the newspapers and won't buy until he needs the goods. Along in September he will buy only a few boots, a little later he will cautiously invest in a few arctics. Then the rush will come and he will have to take what he can pick up. This is going to be a big year in sales, not only because of the dearth of goods, but also because our climate is changing. Our winters are not so severe, but they are of the kind that make rubbers indispensable."

* * *

E. H. CUTLER (*Woonsocket Rubber Co.*)—The rubber-shoe men, of course, have felt in a measure the effects of the semi-panic that has prevailed, but not seriously. One reason for this is that they were in a most excellent condition to meet almost any emergency. Stocks are all cleared out and orders are far ahead. This is true in spite of the fact that jobbers are placing orders very slowly. We were going to shut down in August but can't spare the time; indeed we have increased our boot ticket from 8000 to 9000 pairs a day, and this is nearly all

order work. A firm that we sell to in St. Paul (Foote, Schultz & Co.) sent their drummers out the other day and had no difficulty at all in booking good orders. Of course the whole trouble lies with the retailers, and with their lack of appreciation of the real situation. When I was in the west recently I called on a good many big jobbers and just to show me how the retailers felt they would strike them for an order on rubber shoes when I was present. "D—n the rubber trade. We intend to wait until we can get the goods 10 or 15 per cent. cheaper and then we will buy." After such a statement I was generally introduced, and when I explained to the retailer that stocks of rubber shoes were less than last year by $5,000,000 or $6,000,000, that none of the companies had increased their capacity for turning out goods, and that the population was still growing, they began to feel that it might be as well for them to get rubbers while they could. It rather staggered some of them when I said that if the whole country should buy only $100,000 of rubbers this year there would be no drop in prices. Both jobber and retailer are going to get caught beyond a peradventure, as all the goods that can possibly be made for the next six months will find the readiest sort of a market.

* * *

SAMUEL P. COLT (*National India Rubber Co.*)—To my mind the outlook for the rubber business is very bright. There is only one "evil" about it, and that is the general financial condition. In all other respects the business prospect never looked better. Nor does the financial condition affect us as it does some other industries. The rubber business is one that depends upon good seasons more than upon anything else. The fact that this year will get the benefit of the remarkable call for goods that last year developed should not be lost sight of. It has been our custom to shut down a little while in August, to repair and make alterations. This year we shall take two weeks. We should like four, but our customers will not stand it, without grumbling. This condition of affairs relates not alone to boots and shoes, but to the great number of mechanical goods, and sundries that we also manufacture. I understand that numbers of other rubber-factories are going to have hard work to accomplish their usual summer shut-down for repairs, for the same reasons. With regard to orders on boots and shoes, the jobbers are a trifle behind-hand, and as a result some of them will not be able to get goods when they want them. Nor will there be any lower prices,—not even a temptation to cut on the part of the manufacturers. From the standpoint of a banker I anticipate easier times directly. The national banks will not be forced to help out the savings banks as they expected; the balance of trade is coming this way; gold is coming rapidly into the country; every steamer is carrying out thousands of shares of our stocks, so that all of the causes that before worked against us are now working in our favor.

* * *

WHEELER CABLE (*The Cable Rubber Co.*)—It is not in my judgment the silver bill that worries the rubber-clothing manufacturers, but the tariff. Suppose the 50 per cent. duty on goods be taken off,—what will result? Every mackintosh factory in the United States will have to shut down, and the country will be flooded with foreign goods. As it is they almost beat us, and it is because they fear the repeal of that clause that so many fear to make up goods for stock. At this time we are very busy. We have more hands at work in our factory than ever before. If we only knew exactly whom to sell to there would be very little talk about bad times in this factory. It is well to remember that the weather controls the rubber-clothing business more than the financial condition of the country does. A long, dry season will shut us out more than a silver bill can do. We must have some rain to make a call for our goods. In time, of course, if other industries are in bad shape and the help are out of work, it would affect our sales, but the depression would have to be very general for us to feel it seriously. We have a good many coat-makers coming to us now from other mills,—sometimes as many as twenty a day,—but they will all be at work again early in the fall.

* * *

B. F. PENNINGTON (*Standard Rubber Corporation, Brockton, Mass.*)—While I am not prepared to speak fully on the subject, I will say that up to the present we have never been without orders, and the results from our business, on a whole, have been satisfactory. We will likely run our mills only half time for two or three weeks in August, but we hope by September 1 that things will justify us in running full hours again. I believe, if the silver question were properly settled and the public assured that the tariff would not be too much tampered with, that merchants, as well as manufacturers, would regain confidence and business would brighten up immediately. It is generally conceded that the stock on mackintoshes and rubber clothing throughout the country is light, and the demand for the former is constantly increasing. These two points are favorable. In time all will of course be well; and, though the near future is uncertain, I think there will be some business for all, and our past warrants us in expecting our share of it.

* * *

J. O. STOKES (*Home Rubber Company, Trenton, N. J.*)—Early in June I viewed the situation with more or less apprehension. There are a good many croakers on earth, and most of them seemed to drop in to chat with me about that time. I was told that collections would be worse than they had been, and that it wouldn't be safe to sell to anybody. The months slipped by however, and while our collections were a little slower they were not half as bad as they might have been. As for orders, we have been flooded. I notice when other industries are going slowly that the mechanical-goods trade seems to be good. I look for the biggest fall and winter trade that we have ever had, and contemplate putting in more new machinery and extending my plant.

* * *

A. L. LINDSEY (*Stoughton Rubber Co.*)—There is no doubt that, taken as a whole, the business as well as financial interests of this country are in a bad state. The rubber people, however, were the last of all to feel the depression. I have yet to learn to the contrary when I state that trade has kept up very well until recently. Now, however, the depression has become general, and I believe that all of the manufacturers feel it more or less. The men we have out on the road write us that the buyers we wish to sell to are too conservative to buy our goods, certainly in anything like large orders. It might be added here that as a rule we are too conservative to accommodate those who desire to buy, unless we know the parties perfectly well. No, I can't say that I look for any immediate change for the better. I am looking to Congress for relief, but it will take some time to get things back to where they originally were. Our factory at Stoughton, up to last week, we were running on full time. We then commenced to run five days a week and eight hours per day. We usually shut down for about two weeks each year, but have not decided whether we shall or not this year.

* * *

H. E. CONVERSE (*Boston Rubber Shoe Co.*)—Business is not so very dull after all. That is, I mean it is not with us. Of course I understand that the entire country is suffering from a financial stringency, but so far as I know I must report that

business is, considering the time of the year, fairly good. But it is a fact that jobbers are buying with great caution, and that collections are an almost unheard of quantity in trade. We are still, as we have been all summer, running our factories on full time, and we should have continued to have done so if our employés had not asked for a two weeks' vacation. It was solely because of this that we decided to shut down on August 4 for a couple of weeks. No, I do not think that the financial situation has in any way affected the markets. So far as I know prices are at exactly the same point as they were before we heard anything about a scarcity of money.

* * *

F. C. HOOD (*Boston Rubber Co.*)—So far as the buying and selling of rubber goods is concerned business is very good, but when it comes to collecting money for the goods sold,—why, that is a very different thing. There is no use talking to the contrary; the money market is in very bad shape. I differ, however, from many others in my explanation of the cause for the present trouble. I believe that there is plenty of money to be had except for the reason that it is being kept on hand by those who have it to be used in buying cheap stocks. Personally, money is practically easy, and we are getting on smoothly from day to day. The demand for goods, however, cannot be said to be as good or as great as it was last year at this time. On August 5 we shut down our Franklin mill for a couple of weeks, and at the present time we are running our Chelsea factory only on the first three days in the week. Congress may possibly boost trade up a little, but it will take many months to restore the confidence which has been slowly dwindling for the past year.

* * *

J. FRANCIS HAYWARD (*Cable Rubber Co.*)—Business, generally speaking, is exceedingly dull. We are interested in a special branch of the rubber trade, however, and have been accorded a generous patronage. We have nothing to complain of unless it is that collections are exceedingly slow. We are not doing as much business as we were last year at this time; we are doing just an easy sort of a satisfactory business. I am looking for at least partial relief from Congress, but really I think that it will be a long time before business gets back to where it was a year ago. We hear a great deal of talk about the scarcity of money and the shipping of gold abroad. Now, I would like to know if it is not a fact that there have been more silver certificates issued during the past year than gold dollars shipped across the water. We have not shut down, nor do we intend to do so. At the present time it does not look as though we should find it necessary to even run on "part time."

* * *

GEORGE P. EUSTIS (*American Rubber Co.*)—We are not much disturbed by the financial situation, although we feel the keenness of the money market, and find it exceedingly difficult to obtain ready cash even on gilt-edge securities. For this reason I fear that we shall be obliged on Wednesday next to pay off our help with checks. It is true that on August 2 we shut down for a couple of weeks, but this was our annual shut-down, —our usual vacation, —and it is made largely to admit of our thoroughly inspecting our factory and making any needed repairs. That business is good with us is shown by the fact that in our factory over in Cambridgeport we employ 1800 hands, with a pay roll of about $15,000. We have orders enough for clothing on hand to keep us running for two months, and our shipments of shoes for the first three months of the year (our year, you know, commences with April 1) was heavier by 3000 cases than it was last year. I don't know that I have much of a definite idea as to the cause of this business depression. I do not blame the Democratic party for it, although there are some who fear that the party in power is going to change the tariff. Congress without doubt will repeal the silver bill, or at least the purchasing clause, and after that I rather think that Mr. Cleveland will come out flat-footed and say you must pay in gold. I should be doing our company an injustice did I not add that at present we are not trying to do much business. We would rather have our goods than accounts as things now are, with the exception, of course, of our regular customers with whom we are perfectly acquainted and in whom we have much confidence.

* * *

JAMES BENNETT FORSYTH (*General Manager Boston Belting Co.*)—I have but just returned from a prolonged business trip to the Pacific coast. On my way back I visited not only our agencies at various points, but looked in on several large wholesale houses. It was eminently natural in a trip like this that I should also be brought in contact with lines of manufacture outside of the rubber business, and I was struck with the favorable showing that we made when compared with them. I do not hesitate to say that the rubber business entered the hard times better equipped than any other that I know, and that it has held its own wonderfully. I do not look for a "boom" at once, but I do anticipate a marked improvement very soon. Looking at the question from a manufacturer's standpoint, everything points to a large fall trade. The various supplies that we use are low in price, with the single exception of crude rubber, that all things considered is too high. Of course business is dull at present. It always is when money is scarce, and at the present time money is about as scarce an article as I know of. All kinds of trade are affected. We, in the mechanical goods line, are largely dependent upon the prosperity of other branches of the manufacturing industry, and when we read in the newspapers of the shutting down or failure of a single manufacturing concern, no matter what it may have manufactured, that means something to us. However, I look for an immediate brightening up of business throughout the world and especially in this country, and then I think we shall see business as far above the high-water mark as it is now below it.

* * *

L. D. APSLEY (*Apsley Rubber Co.*)—I am certainly glad to endorse President Cleveland's views upon the financ al question, and I believe they are in line with the sentiment of New England. If Congress promptly acts upon this recommendation confidence in financial circles at home and abroad will undoubtedly be restored, which will be of great benefit to the people at large. I regret that he does not make a recommendation of some kind on the tariff, because I believe to the uncertainty upon this question can be attributed the general closing up of our mills.

* * *

RATCLIFFE HICKS (*Canfield Rubber Co*)—The message only increases my admiration for Mr. Cleveland's soundness of judgment and statesmanlike qualities.

FROM THE OTHER SIDE OF THE GLOBE.

TO THE INDIA RUBBER PUBLISHING CO.: Please find enclosed Post-office order for £1 17/6, in payment of subscriptions to your paper to January 31, 1894. We read your paper always with the greatest interest and look for it regularly every month. Yours truly,

PERDRIAU & CO.

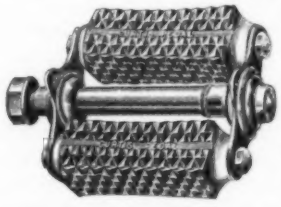
Sydney, New South Wales, June 12, 1893.

NEW GOODS AND SPECIALTIES.

IT has come to be acknowledged that the spraying of trees and small fruits not only pays, but that it is almost necessary to insure good crops. Perhaps the most practical device for this work is that manufactured by an Ohio concern. It consists of a spray-pump which is double-acting, has a large air-chamber to cushion the spray, and is provided with two discharge-ports, both of which can be used with lengths of hose for spraying, or one can be used for spraying and the other as an agitator. The post is so shaped as to fasten to the staves or head of a barrel. It has steel pins, a brass plunger and cylinder, has a good leverage and is easy to operate. Fitted with the proper nozzles it will throw a spray as fine as mist or it may be changed so it will throw a solid stream sixty feet from the point of the nozzle. With proper hose attachments these pumps are found to be of great value for spraying vines, shrubs and fruit trees for the extermination of insects. Manufactured by E. E. Meyer & Brother, Ashland, Ohio.

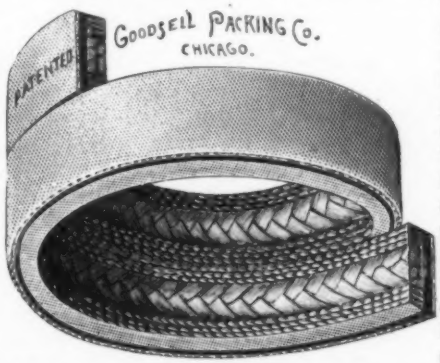
CURTIS BICYCLE-PEDAL.

A RUBBER pedal that bicyclists seem to favor over any other is shown in the accompanying illustration. It is known as the Curtis combination pedal and is so arranged that it is absolutely dust-proof; in other words, no matter what road the wheel is driven over, it is impossible for grit or dust to get into the working parts of the pedal. It is made of molded white rubber with raised diamonds over the surface, giving the shoe the best possible grip upon it. Manufactured by Reed & Curtis Machine Screw Co., Worcester, Mass.



GOODSELL'S "DOLLAR" PACKING.

AN ingenious and useful improvement in the shape of a new rod packing is shown in the accompanying cut. This packing consists of alternate plies or coils of braided flax and cotton duck placed side by side in their bearing upon a piston- or valve-rod, the whole being surmounted or backed with a rubber cushion, and formed into strips or coils ready for application. The uniting of these two valuable fibers affords complete protection to each in service. The braided flax acts as a suitable reservoir for such lubricating materials as oil and moisture, insuring constant contact with the rod and regulated by the gland pressure, the firmer cotton fiber receiving its share of the wear and properly protecting the flax. The continuous rubber cushion which is placed on the outside of and behind the wearing surface gives the proper elasticity to the packing, thus preventing friction and rigid bearing. This packing will be made in coils of the various sizes to meet the wants of consumers and dealers, and is recommended for every purpose where rod packings are used. Manufactured by the Goodsell Packing Co., No. 20 West Lake street, Chicago, Ill.



THE "ECONOMY" CEMENT-CAN.

A NEW cement-can for use in rubber-factories is shown in the accompanying illustrations. It is so arranged that the cement is held not only in the cup-shaped receptacle in the middle of the can, but also in the body of the can. At one side is a little air-tube for use while filling the can. At each of the ends are pockets which may be filled with water and where the brushes are held, thus keeping them in a moist condition. Across the top of the can are two brass wires in such a position that they form an excellent holder for the brushes when not in use. The can is absolutely fireproof and effects a great saving in waste from evaporation, besides always keeping the cement in good condition. Manufactured by the Boston Rubber Cement Co.

SHOWING HOW THE CAN WORKS.

IT HAS A RUBBER BUFFER.

THE newspapers are talking, with more or less reason, about the "deadly electric car." Certain it is that many accidents occur that might be avoided if the proper kind of fenders were in general use. Inventive genius has not neglected this field, but few of the appliances produced have been really effective. That shown in the illustration is a conspicuous exception to this rule. It is made of steel wires, the horizontal bar in front being covered with rubber. It may be run close to the track or lifted high above it, the height being controlled by a releasing device operated by the knee of the motor-man. Repeated trials on dummies placed on the track have demonstrated that this fender will pick up man, woman, or child, and carry them along without harm no matter in what position they may be when struck, or what the

speed of the car may be. It is already in use on the cars between Lynn and Boston and is working most successfully. Manufactured by the Field Electric-Car Life-Guard Co., Providence, R. I.

MINOR MENTION.

To have a maiden stand before you and place upon your lapel a button-hole bouquet has been one of the delights of our civilization. It generally took time to do it, and often renewed attempts, and results were not always satisfactory, so far as the pinning was concerned. A yankee has now robbed the world of half its pleasure by taking a shield pin and attaching a rubber band to it which naturally will readily receive the stem of the bouquet and hold it firmly.

—Any one would think that an article which has so many merits in it as the rubber shoe string would be on sale generally; yet where is it kept in New York? Doubtless somewhere, but people who have become accustomed to them would like to learn.

—Dress-stay makers are using good sized quantities of gutta-percha in the covering of the bones. Some use it as a cement with which to attach the silesia, while others employ it more plentifully making the corset waterproof.

—Careful mothers are now discarding rubber tubing in connection with the nursery-bottle, and using the plain rubber tip. The difficulty lies, it is said, in keeping the tube perfectly clean.

—A California man has brought out an ear-trumpet in which the long metal tube is displaced by one of soft rubber. This makes that article more compact and allows it to be carried in the pocket.

RUBBER SALESMEN ON AND OFF THE ROAD.

AMONG the best-known travelers in the rubber druggists and stationers' sundries trade is Mr. William H. Sheldon, of the Columbia Rubber Works Co. (New York). Mr. Sheldon, after graduating in 1878 from the Stevens Institute of Technology, was for about six years engaged in his profession as a mechanical engineer, and was chief draughtsman of the International and Great Northern railroad in Texas, during which time Mr. Sheldon saw a great deal of the vastness of the Lone Star State. He was also with the Northern Pacific rail-

WILLIAM H. SHELDON.

road, in charge of their testing laboratory. After drifting east again, in 1883, Mr. Sheldon met Mr. George Pellinger, the present superintendent of the Goodrich Hard Rubber Co., and with Mr. Frank B. Nichols incorporated the Keystone Rubber Co., with a plant located at Morrisville, Pa. Two years later he became treasurer of the Sonneborn Rubber Comb and Novelty Co. This company had, or was interested in the Keystone, of which Mr. Sheldon was president. Later Mr. Sheldon sold out his interests in the Keystone company and resigned his office in the Sonneborn company, and took a position as manager of the sales in the hard-rubber department of S. Y. L'Hommedieu & Co., who were the eastern agents for the new rubber mill at Akron, O. Mr. Goodrich, the leading spirit in the Akron Rubber Co., formed a corporation known as the Goodrich Hard Rubber Co., which was a distinct concern from the B. F. Goodrich Co. The latter corporation, however, added to their plant a department for the manufacture of druggists' and stationers' rubber sundries, and to the Columbia Rubber Works Co. was given the selling agency in the east for the output of the above mills, and Mr. Sheldon was assigned the position of manager and sales-agent of this large department of the Columbia Rubber Works Co. The line when first started was rather a small one, compared with some eastern competitors, but it took a very short time, by good management, to make it complete in every line, and to-day Mr. Sheldon has under his care one of the largest and most popular lines in the trade. Mr. Sheldon is well and favorably known over a large territory on the road and is one of the best posted men in the wants of the trade now traveling. He is, however, not on the road altogether, spending the greater part of the time in the office in New York.

* * *

W. SOUTHWICK, sales-agent for the Wales-Goodyear Rubber Shoe Co., is taking a vacation, spending a portion of it around Narragansett Bay.

—G. B. Widner, of the American Rubber Co., after spending a four weeks' vacation on the New Jersey coast, left for a trip through Pennsylvania last week. C. H. Bishop, also of the same company, is on an extended trip in the vicinity of Pittsburgh and Wheeling. The remainder of the salesmen of the American company are on the point of leaving for their respective territories.

—Frank Williams, salesman for the Tyer Rubber Co., has just returned from a successful trip through the south. He stopped in Chicago a few days, "doing" the Fair thoroughly.

—The Park-avenue Hotel, New York, seems to be very popular with the rubber-men. Not long ago its register showed six well-known representatives at one time. Mr. T. W. Plumb, the wide-awake fire-hose salesman of the New York Belting and Packing Co., makes this house his home, as also does the Boston Rubber Co.'s Agent, Mr. Wm. H. Corner, Jr.

—The many correspondents of E. A. Peacock, of the New York Belting and Packing Co., are a unit in saying that he is an indefatigable worker for the success of his company.

—George H. Payne, of McDonnell, Payne & Co., Baltimore, is enjoying a short vacation at his old home, Warrenton, Va. Mr. Payne has recently returned from a long trip in the south and reports business very fair in the large cities. Few men on the road are better known in that section than Mr. Payne.

—James J. Moore is on the road pushing the interests of Parker, Stearns & Sutton (New York). The "Alpha" syringe is still the first love of its popular manufacturers.

—No one on the road selling druggists' sundries is better or more favorably known than the genial H. F. Doherty, of the Davol Rubber Co. (Providence, R. I.) Mr. Doherty's many friends swear by him and he controls a very large trade, which is a strong personal one.

—N. Lincoln Greene, accompanied by his wife, paid the Metropolis a visit last week and enjoyed a vacation among New York's many suburban resorts. Mr. Greene is in the boot and shoe department of the Boston Rubber Co.

—Gilbert Congdon, of the Cleveland Rubber Co., is putting in a week at the Fair and enjoying his vacation in the western Metropolis.

—William H. Daffron is at home from his maiden trip with the Patapsco Rubber Co., and reports that buyers are holding back in placing their fall orders. He had a very good trip on druggists' sundries and says stocks are very light in clothing.

—H. N. Towner, of Towner & Co., Memphis, Tenn., is still in New York combining business with pleasure.

—C. J. Boyd, of Boyd, Jones & Co., Baltimore, has just returned home from a ten days' visit to the Fair, which he enjoyed fully.

—Silas H. Jenkins, western representative for the Hodgman Rubber Co., who has been making his headquarters in Chicago, is back in New York. Mr. Jenkins is very much pleased with the World's Fair city and has made many friends there.

—Rubber-men on the road have found the going pretty hard recently, many of them reporting the worst fall trade that they have ever had; however this complaint comes mostly from the west, where the financial condition has been such that it has caused buyers to shut down entirely in making purchases. Stocks everywhere are reported light and the outlook is for a late business. Reports over the country show that the south is buying more freely than the other parts of the country, especially in clothing, and several travelers recently returned from the cotton belt report a very good trade in mackintoshes. Notwithstanding the jobbers are having a hard time placing their goods early, the clothing-mills are nearly all busy; in fact some of them are crowded with orders and are away behind in deliveries. Times are not at their best, it is true, but none but "calamity howlers" are predicting sure ruin.

TRADE AND PERSONAL NOTES.

THE firm of Parker, Stearns & Sutton (New York) have become a corporation under the laws of the State, to continue in the business of manufacturing druggists' sundries and other rubber specialties. Their capital stock is stated in their charter to be $450,000, subscribed equally by Russell Parker, James H. Stearns, and B. Franklin Sutton, who become directors of the corporation. Their offices are at Nos. 228-229 South street and their factories at Nos. 449-553 Water street.

—The present satisfactory condition of the Girvin matter in San Francisco is due to the fact that James Bennett Forsyth, general manager of the Boston Belting Co., went personally to San Francisco, secured one of the brightest lawyers there (Mr. Harold Wheeler), and gave his personal attention to the creditors' interests with singular success. This is the business growing out of the failure of James W. Girvin & Co., rubber-goods dealers in California towns, in March last.

—During the fourteen years that the Bridgeport gore has been in use it has been put into more than 100,000,000 pairs of shoes and in almost every case has given the best of satisfaction.

—Chris Paulsen, the latest adventurous youth who is to cross the Atlantic in a row-boat, has an attachment to his sixteen-foot skiff that will interest rubber-men. It is a series of inflated rubber tubes which are fastened to the deck and are expected to give it additional buoyancy in case of shipwreck or danger from heavy seas.

—Rubber-manufacturers in all lines use a great many mallets and it will perhaps interest them to know that the Sewing Machine Supplies Co. (No. 105 Summer street, Boston) are now manufacturing a special raw-hide mallet for rubber work.

—The Enterprise Rubber Co. (Boston) will hereafter carry a full line of the goods of the Candee Rubber Co.

—Brokers in Providence seem to have an inside tip that at about 64 for Rubber Preferred will be found the bottom. Holders of the stock in that city also name that figure. They claim it will cut away from the general situation then, even if the rest of the stock market keeps on in its downward course.

—Fred Hardwick has been made superintendent of the Passaic mills of the New York Belting and Packing Co. He entered the employment of the company upon the establishment of their Passaic plant eleven years ago, and has been successively bookkeeper, foreman, and manager of the hose and pneumatic-tire department. The change took place August 1, Mr. Hardwick succeeding George Woffendon.

—Thomas P. Hines, manager of the Hope Rubber Co., Providence, R. I., has gotten up a neat little emblem of the favorite product of Rhode Island,—the delicious clam. To a silk ribbon is suspended an imitation in white rubber of that shell-fish, which, being hollow, could be filled with the liquid of that article of diet if one cared to do so. The ribbon has inscribed upon it the coat of arms of Rhode Island, an anchor inscribed with the word "Hope." Mr. Hines reports a fair business, and is keeping all hands busy in hustling off some conspicuously-advertised mackintoshes at the door of his store.

—Eugene F. Phillips is taking advantage of a lull in business to expedite a removal of machinery to his new mill at Seekonk, R. I. The works now employ 700 hands and the advantage of the new plant is that there is so much ground room, the manipulating of cable and insulated work up so many flights of stairs being a drawback in its manufacture.

—C. A. Hayward, who keeps himself busy in attracting a trade on the upper part of Westminster street, Providence R. I., and who also has a rubber store in Pawtucket, R. I., says it is his intention to put in a balcony in the rear end of the latter, which will be used as a department for the sale of mackintoshes. The balcony will be nicely fitted and furnished and the intention illustrates the need of a larger share of attention by the general trade to this branch of the business. Mr. Hayward reports a fair trade in all lines and says the depression has not reached the retail trade.

—The Palmer tire, recently described in THE INDIA RUBBER WORLD, evidently has points which please the English trade. Mr. Palmer is in Europe and it looks as though he would have little trouble in disposing of his invention there.

—According to common report the Elastic Tip Co. have a very good article in the way of the "Little Gem" repair outfit for pneumatic tires. The sales have been unexpectedly large.

—The following boot- and shoe-houses have buyers in the east arranging for the fall trade: Marsh, Smith & Marsh, Atlanta, Ga.; Lever & Stork, Columbia, S. C.; Carswell & Carswell, Chattanooga, Tenn.; J. H. Laws & Co., Durrell Brothers and J. N. Dohan, Cincinnati, Ohio; Mark & Blum, Galveston, Texas, and S. D. I. Piles, Yankton, S. D.

—The Magnolia Metal Co. (New York), who sell metal all over the world, extend to their friends an invitation to visit their exhibit at the World's Fair. It can be found at Section No. 10, Column No. E-53, where all people who are interested in the running of machinery with the least amount of friction are welcome.

—The new boiler put in the works of the Standard Rubber Corporation recently was made by the Roberts Iron Works Co. (Cambridgeport, Mass.) and is working very nicely.

—The factories of the United States Rubber Co. (the Meyer plant) and the New Brunswick Rubber Co., at New Brunswick, N. J., were shut down on July 28.

—Frank Marquard, superintendent of the Dickinson Hard Rubber Co., at Springfield, Mass., committed suicide about the last of July. Among the attendants at the funeral on August 2 was John R. Hodges, foreman at the same shop, who seemed much affected by the event. On the evening of the next day Hodges jumped from a bridge and drowned himself.

—The L. Candee rubber-manufactory shut down for the first two weeks of this month—"not for lack of orders," according to the New Haven *Journal*, "but owing to the financial stringency."

—A national association of retail rubber-stamp and stencil-dealers was organized in Chicago on July 12.

—An interesting exhibit of asbestos goods is made at the World's Fair by Louis Wertheim, Frankfort, o/M. It is to be found in the German section, Machinery Hall, to the left of the main entrance.

—George W. Campbell, a manufacturer of rubber-cement at No. 211 Walworth street, Brooklyn, N. Y., lost his life on July 29 in a fire caused by the explosion of naphtha.

—The rubber-goods store of J. N. McDonald, Troy, N. Y. was damaged by fire on July 19, and the stock of goods ruined The newspapers report the loss on the building at $5000 and on stock at $20,000.

—The Canadian Rubber Co., at Montreal, and the Toronto Rubber Shoe Manufacturing Co., Limited, with works at Port Dalhousie, have lately put in the machines of the Standard Rivet Co., for use in arctic work. To those in the rubber manufacture who are not familiar with the excellencies of this machine and its special advantages in rubber shoe work, we recommend that they see the working machine at the World's Fair in the Shoe and Leather building, Group 72, Class 446, Section G, No. 6.

—The Toronto Rubber Shoe Manufacturing Co., Limited, have succeeded the Toronto Rubber Co. of Canada, Limited, at Toronto. It is announced that they will henceforth concentrate their attention upon the manufacture of rubber boots and shoes of all kinds, which will be supplied to the jobbing and wholesale trade exclusively. The factories are at Port Dalhousie. The Toronto offices have been removed from No. 28 King street, W., to No. 76 Bay street. The directors and officers of the company remain as heretofore, namely: John H. Taylor, president and treasurer; Sylvester Neelon, vice-president; James Pearson, secretary; T. J. Sheehan, superintendent; James A. Young, selling-agent.

—The *Prins William II*, arriving in New York on June 12, brought from Trinidad two bundles of Balata for L. G. Tensburg,—a direct consignment, which is very infrequent.

—The Berlin Iron Bridge Co. (East Berlin, Conn.) are building the iron roof on the new purifier house for the Philadelphia Gas Co. The building will be 70 feet wide and 180 feet long, the roof being constructed entirely of iron, covered with slate. The new power-house for the Worcester (Mass.) Traction Co. will be designed and built by the same company.

—The sheriff of the County of New York has received two executions for $3524 against the Chemical Rubber Co., in favor of N. Chapman Mitchell, based upon judgments filed in the County Court on July 12. The sum named is the aggregate of two notes, given in 1892 and 1893 and unpaid.

—The Gleason & Bailey Manufacturing Co. (Seneca Falls, N. Y.) have built a hose-carriage for the Ætna fire company, of Newark, Del., and have received orders for a patent city hook-and-ladder truck for Cleveland, Ohio; a patent two-horse, hose-wagon for Port Richmond, N. Y., and three large patent two-horse hose-wagons—similar to those in service in the New York city fire-department—for Newark, N. J.

—The Marlboro (Mass.) Rubber Co. have opened a branch store for the sale of bicycles and sporting goods at Bar Harbor, Me.

—The Brown Comb Factory of Wappinger's Falls, N. Y., founded in 1828 by Emory Lowe, has been closed indefinitely and the property is offered for sale. From 1856 to 1884 it was in charge of Elias Brown. Since his death it has been managed successfully by his sons, one of whom, Samuel R. Brown, is now sole owner and manager. His wish to retire from business is given as the reason for selling. It is a large and well-equipped factory, said to be the only one in the United States capable of turning out both horn and rubber goods.

—Ground was broken on June 21 for the new vulcanizing building of the Woonsocket Rubber Co., at Millville, Mass. It is to be a frame structure 46x120 feet, and two stories high. Day & Armstrong have charge of the stone-foundation work. This enterprise is welcomed by the people of the village as the beginning of a new era of prosperity at that point.

—The pay roll of the National India Rubber Co. on Monday, June 19, amounted to more than $11,000, there being 1117 names on the pay-roll. The erection is contemplated at that point of a large structure to be used as a Pará department, after which it is expected that the pay-roll will be further increased.

—The Glendale Elastic Fabrics Co. (Easthampton, Mass., have moved their old machine-shop and begun work on a new one—a two-story brick building 40x45 feet—to occupy the same site.

—W. L. Sage & Co., the large jobbers of rubbers in Boston, have leased the entire building Nos. 168-170 Congress street, and moved their business there.

—The J. F. W. Dorman Co. have been incorporated in Baltimore, with a capital stock of $35,000. The incorporators are William A. Moore, Kate D. Becker, Frederick A. Immler, John R. Wickes, and Edmund Higgins. They will continue the printing-press and rubber-stamp business in which the late Mr. Dorman was engaged.

—The Berlin Iron Bridge Co. (East Berlin, Conn.) will build for the Fuller Iron Works (Providence, R. I.) a new machine-shop, of which the sides are entirely of glass, under the patents lately granted the Berlin company for this construction. The building will be 90x210 feet. The Berlin Iron Bridge Co. are also putting up a new foundry for the Watts-Campbell Co., at Newark, N. J.

INDIVIDUAL MENTION.

MR. ERNEST HECHT, of the well-known Paris firm of Hecht Freres & Co., intends to sail from Havre on the steamer *La Bourgogne* on the 18th instant. He has been appointed by the French government to study at the World's Fair the natural products of the foreign tropical colonies and compare them with those of the French colonies. He will no doubt embrace the opportunity to look into the rubber market here, as his firm is the largest in the rubber trade in Europe.

—Before sailing for Europe last month Mr. Joseph Banigan mentioned to a New York *Times* reporter one of the prospective features of his trip. It appears that while traveling in Ireland last summer he made the acquaintance of a priest in the delightful little town of Glengarry. The priest had a fine church, but his attention had been more given to the elaboration of that edifice than to a suitable parish house, and as a consequence his living quarters were unsuited to a man of the cloth. The rubber magnate took in the situation, talked the matter over with the priest's friends, got the priest's ideas as to what sort of a house would be the thing, and before he had left Ireland had architects at work preparing plans. These meeting his approval, the work of erecting a magnificent residence for this far-away priest was begun, and a few weeks ago the house was completed. Mr. Banigan, accompanied by members of his family, makes the vovage to be present when the fortunate priest takes up his residence in the building prepared for him, and he will personally turn over to him the keys, with many earnest wishes for long life in his good work.

RUBBER-MEN AS ANGLERS.

VERY few of the rubber-men in the United States are without some means of relaxation during the summer months. In many cases it takes the form of a mania while it lasts, and a majority of those thus affected go in for fishing. In speaking of this as a mania the writer would not be misunderstood as using a condemnatory phrase; indeed, he is himself so possessed of that fascination that he could angle for black bass day after day for weeks and never weary of it, provided of course that the fish pay sufficiently respectful attention. As a rule the magnates of the caoutchouc industry are not possessed of special abiding places in the way of camps, although a number of them are members of fish and game clubs. They, therefore, go to one place one year and another year to another place, which perhaps is the wisest way, unless, indeed one strikes the Eden of fishermen, and knows that he has secured it. Perhaps no place in the United States comes nearer to being this Eden than does Moosehead Lake, and it is there that many of the rubber-men go, and it is there also that one rubber-man at least has established a camp for himself. This is shown in the accompanying illustration and is known by the cheerful name of Camp Sunshine. Situated near the water's edge, with Mount Kineo in plain sight across, a three-mile stretch of water, with Mount Katahdin rising in the far distance above the lesser mountains that circle the Lake, with vast forests of pine coming so close to the water's edge they lean over and their branches are lapped by the waves, Camp Sunshine is surrounded by all the romance that should appertain to the fisherman's Paradise. Of course the main object in having a fishing-camp is to catch fish, and this the guests of Camp Sunshine have been exceedingly successful in doing. The editor of THE INDIA RUBBER WORLD visited this favored spot early this season and saw strings of trout brought into camp that have given him when he attempted to describe them, the reputation for a lack of veracity that is likely to prove an incubus for the rest of his life. He refrains, therefore, from giving the size of the fish, not even mentioning that the largest trout caught this season was 8½ pounds in weight, and that the party every time they went out caught from thirty to sixty, none of them ranging less than 1½ pounds in weight. The camp is equally owned by Willis Darling of the Boston Woven Hose and Rubber Co., and E. H. Best, a well-known supply-man of Boston.

—Mr. W. L. Sage, of Boston, one of the most enthusiastic fishermen in New England, has solved the problem of contentment in fishing. In other words, he boldly declares that he doesn't care whether the fish bite or not. He is out to have the sun shine on him, the rain to fall on him, and to have the tramp;—nevertheless, he usually brings home a good string.

—Mr. Ingraham, of the Chadwick lead-works, well known in the rubber trade, recently returned from Moosehead Lake with some very interesting fish experiences to relate.

—Mr. H. L. Pike, of Converse & Pike (Boston), is an enthusiastic fisherman and when business is not too pressing takes a day or several days, going into the New Hampshire hills usually, for trout.

—Mr. C. S. Knowles, of Boston, is so situated that by force of circumstances he is an excellent fisherman. Living in New Bedford, as he does, he knows where and when the blue fish run and usually succeeds in getting his share.

CAMP SUNSHINE.

—Another enthusiastic blue-fish capturer is Mr. W. G. B. Stokes, vice-president of the Home Rubber Co. (Trenton, N. J.), who each summer goes to one of the Jersey coasts where he spends days in capturing this gamy denizen of the deep.

—Mr. George A. Alden, of Boston, does not need to go to Maine or New Hampshire for his fish, for on his estate in Wellesley is a large artificial pond stocked with black bass that are always ready for the hook of their proprietor.

—Mr. E. A. Rand, of the Newton Rubber Co., is to be reckoned among the disciples of Izaak Walton, as he steals away a day at a time and has excellent luck with the pickerel in Charles river and other streams in the vicinity of Boston,

—Mr. Wheeler Cable, of the Cable Rubber Co. (Boston), is perhaps one of the most successful pickerel fishermen in New England. Indeed, it is said that a string he brought in from Cape Cod last year was the largest individual string brought into Boston that year.

—Mr. Angel, of the H. F. Taintor Co., has a fine summer place in Rhode Island, and is a very successful tautog fisherman.

—Mr. George E. Barney, of the Barney Ventilating Fan Co., is a well-known fisherman, always taking an early fishing trip when the ice gets out of the lakes. He was unusually successful this year, sending home some fine specimens of the "speckled beauties."

—Mr. E. H. Cutler, of the Woonsocket Rubber Co., is at his summer place in Falmouth, Mass., for the season. He is reported to be watching with eager interest the first signs of blue fish.

OBITUARY—GEORGE H. LAUGHTON.

THE superintendent of the Chicago Rubber Clothing Co., Mr. George H. Laughton, died on July 30 at Racine, Wis., where the factories of the company are located. He was born November 20, 1845, at Plattsville, Wis.; entered the United States Naval Academy in 1860; was engaged in the agricultural-implement business in Chicago until 1877; formed in 1882 a rubber-manufacturing company at Grand Crossing, Wis., and in 1887 the Chicago Rubber Clothing Co. He became superintendent of the latter company, and under his management the business has grown to large proportions.

Prior to the advent of the mackintosh this company made large quantities of gossamers. The "electric" finish that was so popular for two or three years was invented by Mr. Laughton and while he was able to keep the process secret he made a reat deal of money out of it. Mr. Laughton was a man of magnificent physique, and was a tireless worker. He was singularly approachable, and was generous to a fault. His untimely death was due to Bright's disease, from which he had been suffering for some time past.

THE MARKET FOR CHICLE.

REGARDING the Chicle market, the Seeger & Guernsey Co. (No. 7 Bowling Green, New York) favor THE INDIA RUBBER WORLD with the following information:

"Since May, when chicle sold at 50 @ 55 cents, there has been a steady decline, and it is now quoted at 35 @ 40. Manufacturers have been disposed to buy only small lots to supply their immediate needs, owing to the stringency of the money market and the general stagnation in business. The stocks on hand are considerably smaller than at the corresponding period of last year; and holders do not appear inclined to force sales. Arrivals during July were insignificant, and will continue to be so during August. The new crop will not begin to arrive before the middle of September."

REVIEW OF THE RUBBER MARKET.

THE arrivals of Pará rubber bid fair to be small for some time to come, the shipments by one Pará steamer during the past month, the *Capua*, only 69,600 pounds, being an illustration of the movement. It will be remembered that during last winter several vessels brought each amounts exceeding 1,000,000 pounds. The causes for this light movement are not difficult to determine. Chief is the general dullness in business. The bicycle-tire industry, which for a long time had absorbed a large amount of rubber, variously estimated from two to three million pounds annually, is so prostrated that it requires very little now. With the exception, perhaps, of the boot and shoe branch of the trade, a great falling off in consumption is the rule. The want of ready money in this country encourages manufacturers to work up their stocks more closely, and this is another source of restriction. Then there is no speculation, and no one is willingly carrying stocks for that purpose. Last winter there was a strong belief that rubber would see much higher prices, and a few "loaded up" for the rise, but as it turned out, the contrary is the case, and supplies became so ample that the usual replenishment does not now go on. Bankers will not encourage speculation, being very cautious, and, as a rule, only relinquishing their liens for actual cash. This makes transfers difficult and restricts sales; in fact, the manufacturer with his actual needs is the only buyer now in the market. It is difficult to say when this condition will change. Easy money, it would seem, must soon come, but the nation will then probably have taken on a fit of economy, the extent and duration of which is a matter of guesswork.

Rubber for forward deliveries is without feature save that it is lower than spot by two and three cents per pound. A lot of 30,000 pounds of old rubber was disposed of early this month at 77 cents and spot is held firmly at a few cents less. The stocks of Pará rubber are not accumulating, the visible supply being not far from the figures of one year ago. A feature of the situation, made prominent by the apathy at home, is the sales for exports. Manufacturers in Germany, Russia, and England are buying freely of Pará rubber in the New York markets. French merchants are doing less than other foreigners, though buying to a considerable extent. At least two of the New York importing houses are prominently represented abroad in Parás, and the constant flow of Centrals through New York for the English market has been commented upon for some time. Possibly one reason for this is that stocks, including wheat and other articles are more readily carried in Europe than New York, and rubber seems to have joined the procession.

The world's visible supply of Pará rubber on July 31, 1893, compared with a date one month before, and one year before, was as follows, amounts being stated in tons:

	July 31, 1892.	July 31, 1893.	June 30, 1893.
United States	504	846	970
England	630	622	615
Pará	495	450	375
Afloat	265	435	250
Total	1914	2353	2210

The statistical position of Pará rubber in New York is thus reported for July, 1893, as compared with the same month tn preceding years:

Stock of Pará here,	June 30,	about	2,000,000 pounds.
Receipts	July	"	475,000 pounds.
Deliveries	July	"	600,000 pounds.
Stock	July 31, 1893,	"	1,875,000 pounds.
Stock	July 31, 1892,	"	1,100,000 pounds.
Stock	July 31, 1891,	"	2,670,000 pounds.

PRICES FOR JULY.

	1893.		1892.		1891.	
	Fine.	Coarse.	Fine.	Coarse.	Fine.	Coarse.
First	67	42	68	46	81	51
Highest	67	43	68	46	81	52
Lowest	66	40	67	43	77	47
Last	66½	42	67	43	79	50

The latest quotations in the New York market are:

Pará, fine, new	65@67	Sierra Leone	25@40
Pará, fine, old	71@73	Benguela	45@46
Pará, coarse, new	42@50	Kongo Ball	36@42
Pará, coarse, old	———	Small Ball	33@36
Caucho (Peruvian) strip	43@44	Flake, Lump and Ord	26@28
Caucho (Peruvian) ball	48@49	Mozambique, red ball	———
Mangabeira, sheet	35@38	Mozambique, white ball	———
Esmeralda, sausage	45@46	Madagascar, pinky	54@56
Guayaquil, strip	32@35	Madagascar, black	38@42
Nicaragua, scrap	43@45	Borneo	26@42
Nicaragua, sheet	41@42	Gutta-percha, fine grade	1.30
Guatemala, sheet	———	Gutta-percha, medium	1.00
Thimbles	37@38	Gutta-percha, hard white	85
Tongues	33@36	Gutta-percha, lower sorts	nominal.

In regard to the financial situation, Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper, New York, advise us as follows:

"The bank and mercantile failures that occurred during July increased the distrust that prevailed throughout June, and the business in commercial paper has been so restricted that rates

were only nominal at say, 9 to 12 per cent. There was a liberal supply of first-class rubber names, which would have been readily absorbed had the banks been in funds. We look for a change for the better in the near future."

THE TRADING IN RUBBER STOCKS.

THE quotations which follow represent the daily transactions in Rubber stocks on the New York Stock Exchange for each business day since the last report printed in this journal:

DATES.	COMMON.			PREFERRED.		
	Shares.	High.	Low.	Shares.	High.	Low.
July 11.....	200	36	34	85	77	74
July 12	4	38	38	110	70	70
July 13.....	....	....	....	....	....	....
July 14.....	200	36¼	35	....	....	....
July 15.....	....	....	....	....	....	....
July 17.....	100	38	38	...	....	....
July 18.....	360	37	33½	116	77	75
July 19.....	....	....	....	....	....	....
July 20.....	710	36	33	430	71¼	70
July 21.	200	34	32½	345	70	69
July 22.....	100	31	31	50	69	69
July 24.....	200	30	30	35	71	69¾
July 25	...	....	....	90	70	66
July 26.....	100	25	25	25	68	68
July 27	300	28½	26¼	100	65	65
July 28.....	100	30	30	....	....	....
July 29.....	100	25	25	....	....	....
July 31.....	....	....	....	....	....	....
Aug. 1.....	100	24¾	24¾	....	....	....
Aug. 2	100	23	23	145	62½	62½
Aug. 3.....	620	24¾	23½	....	....	....
Aug. 4.. ...	....	....	....	127	64	64
Aug. 5.....	....	....	....	165	67	67
Aug. 7.....	150	23	23	50	64	64
Aug. 8.....	425	21	20	30	64⅛	64⅛
Aug. 9.....	200	20	19	...	...	....
Aug. 10.....	....	....	....	....	....	....
November ...	31,208	44¾	38¾	....	....	....
December.....	15,943	48¼	39	2,607	99	94⅛
January	9,604	47¼	42½	5,521	99	94
February	7,024	46½	43	1,333	97	92½
March...	30,438	58½	42	2,938	99	93
April	25,625	60⅝	53⅞	3,251	99½	94¾
May.....	24,999	57¾	33	4,835	91	80
June.....	5,474	45	34½	2,323	83	74
July.....	2,774	38	25	1,504	77	65

THE RUBBER-GOODS TRADE.

IN rubber goods there is an apathy prevailing, as in everything else. Rubber boots and shoes are going off slowly. Details are coming in fairly and regularly, but not extravagantly, but there is a positive lack of new orders. In consequence the mills are very generally closing down, as much for repairs as anything else, but with some forebodings that the cessation will be more of a permanent character than it is pleasant to contemplate.

In mechanical goods a very fair business has been done, but mill supply men now are doing nothing. The railroads were expected to be good customers, but the financial blow has struck them, and interest and dividends are jeopardized. In this state of affairs the law which compels the equipment of 2,000,000 of cars before 1897 has passed out of sight, and no preparations are being made for it. Fire hose has had a good season, and contracts yet are of good proportions.

A rubber-man, speaking of the situation, said: "The American people remind me of a good swimmer who has fallen overboard, and in his panic has forgotten that he can get ashore himself. We are looking to England to help us, we want the silver law repealed, and we are catching at every straw, and swallowing mouthful after mouthful of salt-water. When we finally see that good times will not come back by an act of Congress, or that European help is not sufficient, we will put our head to the wave, throw out our arms, and strike for the shore, and we will get in, and then wonder who the fiddler is that struck up the tune for the dance that we have taken. There is plenty of money being issued, and such a panic as we have seen is illogical."

AFRICAN RUBBER—LIVERPOOL.

TO THE EDITOR OF THE INDIA RUBBER WORLD: During the month of July the market for African rubber has been very steady, and, with the exception of some soft inferior kinds, we have no change to report in the quotations. At the beginning of the month sales of really good quality Accra Biscuits were made at 1/10, and this was the quotation ruling at the end of the month. Accra Paste, which has been arriving rather freely, has fallen from 1*s* to 9*d* per pound. We quote as follows:

	English price.	Approximate price laid down in New York.
Soft Liberian	1/2½@1/3	29 @30 c.
Soft Liberian (pasty)..	0/9 @0/10	18 @20 c.
Hard Liberian.....	1/3½	31 c.
Accra, Saltpond, and Cape Coast Biscuits of fair quality.....	1/8¾@1/9¼	41½@42½c.
Accra Biscuits best quality	1/10	44 c.
Addah Niggers.....	1/9	42 c.
Prime Selected Sierra Leone Niggers....	1/6½	37 c.
Grand Bassam and Assinee.....	1/5@1/7	34 @38 c.
Prime Gambia Niggers.....	2/1	50 c.
Mixed Cameroon.	1/5½@1/6	35 @36 c.
Large Cameroon or Batanga Ball.....	1/5	34 c.
Best Kongo Ball.....	1/8@1/8½	40 @41 c.
Gaboon Ball (or second Kongo Ball)....	1/7½@1/8	39 @40 c.
Thimbles.....	1/6 @1/6⅛	36 @37 c.
Flake	1/1 @1/1½	26 @26½c.
Lump Flake.....	1/1½@1/2	27 @28 c.
Prime Black Manoh Twists.....	2/3½	55 c.
Old Calabar	1/5	34 c.
Loanda Niggers.....	2/5 @2/5½	58 @59 c.
Benguela Niggers c. i. f. New York....	1/9¾@1/10	43½@44 c.

In London quotations for medium kinds are mostly unchanged, with the exception of fine Columbian Sheet, which has fallen from 2/7 to 2/5. We append a statement of Liverpool rubber statistics for the month.

WM. SYMINGTON & CO.

Liverpool, August 2, 1893.

LIVERPOOL RUBBER STATISTICS.

	Pará grades.	Africans.
Stocks, June 30 (pounds).....	1,391,040	1,249,900
Arrivals during July.....	1,052,800	396,480
	2,443,840	1,646,380
Stocks, July 31.....	1,393,380	1,225,280
Deliveries during July.....	1,050,460	421,100
Deliveries during June.....	900,480	976,640

The stock of Pará rubber on July 31 consisted of:

	Fine.	Entre-fine.	Negroheads.	Total.
First hands.....	357	60	115	532 tons.
Second hands.....	81	7	2	90 "
Total	438	67	117	622 "

The Stock of Ceará rubber on July 31, consisted of 722 bales; stock of Peruvian rubber, 67 tons.

IMPORTS FROM PARA.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows, all quantities being expressed in pounds:

July 15.—By the steamer *Lisbonense*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Totals.
Boston Rubber Shoe Co...	105,300	19,600	34,600	1,900	161,400
Joseph Banigan..... ..	19,300	4,600	26,900	....	50,800
Shipton Green.....	....	....	....	42,400	42,400
G. Amsinck & Co.....	600	....	3,400	9,600	13,600

Lawrence Johnson & Co..	11,400	700	....	...	12,100
W. R. Grace & Co	....	....	12,000	....	12,000
Total.....	136,600	24,900	76,900	53,900	292,300
July 19.—By the steamer *Basil*, from Manáos and Pará:					
G. Amsinck & Co.....	4,300	1,000	7,900	25,200	38,400
Thebaud Bros.....	15,900	....	....	....	15,900
Boston Rubber Shoe Co..	7,400	1,300	3,300	1,000	13,000
Reimers & Meyer.....	6,900	2,900	2,800	....	12,600
Joseph Banigan...	7,400	1,300	3,300	...	12,000
To Order.....	1,800	300	700	8,900	11,700
For Havre.....	4,200	300	200	....	4,700
Hagemeyer & Brunn.....	1,400	....	200	...	1,600
Shipton Green.....	....	....	....	300	300
Total.....	49,300	7,100	18,400	35,400	110,200
July 23.—By the steamer *Capua*, from Pará:					
Joseph Banigan.....	17,600	5,100	20,700	....	43,400
Reimers & Meyer...	6,800	1,100	5,400	....	13,300
Boston Rubber Shoe Co...	....	....	....	12,900	12,900
Total.....	24,400	6,200	26,100	12,900	69,900
July 31.—By the steamer *Justin*, from Pará:					
Reimers & Meyer ...-.....	26,800	3,200	31,200	....	61,200
Joseph Banigan.....	2,900	700	19,200	....	22,800
Boston Rubber Shoe Co..	....	....	....	10,600	10,600
Lawrence Johnson & Co...	....	....	8,400	...	8,400
Shipton Green.....	....	..	....	3,800	3,800
Total.....	29,700	3,900	58,800	14,400	106,800
July Imports of Pará rubber.....					579,200
June Imports.....					1,955,915
May Imports...					1,367,600
April Imports.....					3,881,400
March Imports					2,107,600
February Imports.....					2,924,300
January Imports..					3,349,000
December Imports..					4,809,600

IMPORTS OF CENTRALS.

BELOW will be found in detail the imports at New York, during June, 1893, of India-rubber from Mexico, Central America, and South America, other than Pará grades:

JULY 1.—By the *Orange Nassau*=Curacoa:

	POUNDS.
D. A. DeLima & Co.....	1,200

JULY 1.—By the *Hogarth*=Pernambuco:

To Order.....	4,300

JULY 4.—By the *Newport*=Colon:

A. N. Rotholz	650
Eggers & Heinlein.....	398
[Ex *Colon*=Mexico.]	
F. Probst & Co.....	1,135
H. Marquardt & Co.....	310
[Ex *Colon*=Central America.]	
George A. Alden & Co.....	290
[Ex *Casma*=South Pacific.]	
W. R. Grace & Co.....	6,545
A. M. Cohen & Sons.....	128
Lamson & Kemp	1,848
Kunhardt & Co.....	2,700
[Ex *Dee*=Greytown.]	
Andreas & Co...	6,631
W. H. Crossman & Co.....	12,264
Hoadley & Co.....	3,623
Total	36,522

JULY 8.—By the *Ailsa*=Colombia:

*H. S. Forwood (Cartagena).....	5,825
Ellinger Bros (Port Limon,.....	875
Total	6,700

*For London account.

JULY 12.—By the *Colombia*=Colon:

A. N. Rotholz	325
G. Amsinck & Co. (Colombia.).....	6,390
[Ex *Pisarro*=South Pacific ports.]	
J. M. Ceballos & Co.....	2,700
Herzel, Feltman & Co.....	1,400
To Order.....	4,201
[Ex *San Juan*=Central America.]	
Jacob Balz.....	250
R. Samper...	250
[Ex *Mauve*=South Pacific ports.]	
G. Amsinck & Co.....	11,774
J. M. Ceballos & Co.....	3,866
Hirzel, Feltman & Co..... ..	784
A. Santos & Co.....	1,233
W. R. Grace & Co.....	2,900
C. Roldan & Van Sickel	5,688
Total.....	41,470

JULY 12.—By the *City of Alexandria*=Mexico:

H. Marquardt & Co. (Tuxpan).	125
J. W. Wilson & Co (Tampico)..	125
J. Agostini (Frontera)....	500
Total	810

JULY 12.—By the *City of Pará*=Panama:

Bock & Co.....	3,500

JULY 16.—By the *Alert*=Central America:

Eggers & Heinlein (Belize)	850
A. S. Lascelles & Co. (Puerto Cortez).....	450
O. G Mayer & Co. (Puerto Cortez).....	1,350
Eggers & Heinlein (Cape Gracios)..... ...	2,800
W. H. Crossman & Bro. (Greytown)	3,750
Andreas & Co. (Greytown).....	2,200
Total.....	11,400

JULY 16.—By the *Alamo*=Colon:

J. Aparicio & Co	1,703
A. P. Strout.....	640
J. Agostini..	2,846
Munoz & Esprella.....	161
Total.....	5,440

JULY 17.—By the *Alvena*=Colombia:

Wm. H. Crossman & Co. (Greytown).....	1,125
J. Aparicio & Co. (Port Limon)	250
A. P. Strout (Port Limon).....	2,025
Total...	3,400

JULY 20.—By the *Athos*=Cartagena:

G. Amsinck & Co..	850
Pim, Forwood & Co. (for London)	4,050
Total	4,900

JULY 21.—By the *H. A. Hartmann*=Greytown:

Marcial & Co.....	750
A. P. Strout	27,700
Munoz & Esprella.....	13,300
Hoadley & Co..... ...	1,500
Total.....	43,250

JULY 24.—By the *Alps*=Ciudad Bolivar:

Thebaud Brothers.....	71,400
J. Agostini, Fine.....	4,300
" Coarse....	3,500
Total	80,200

JULY 26.—By the *Yucatan*=Mexico:

C. Viadero (Vera Cruz)...	750
T. Ware (Frontera).....	150
Total.....	900

JULY 30.—By the *Premier*=Boca del Toro:

A. N. Rotholz.....	200

JULY 31.—By the *Andes*=Port Limon:

Ellinger Brothers.....	1,500

JULY 31.—By the *Newport*=Colon:

Piza Nephews & Co. (Newport).....	5,070
Hoadley & Co. (Newport).....	770
[Ex *Puno*=South Pacific.]	
J. M. Ceballos & Co.....	5,945
Hirzel, Feltman & Co.....	2,100
To Order.....	5,400
[Ex *Casma*=South Pacific].	
C. Roldan & Van Sickel...	400
W. R. Grace & Co....	4,000
Kunhardt & Co	900
[Ex *Aconcagua*=South Pacific.]	
Hirzel, Feltman & Co	1,500
J. M. Ceballos & Co	2,500
To Order.....	1,800
[Ex *City of Panama*=Mexico and Central America.]	
W. Losiza & Co.....	511
J. Aparicio.....	6,360
J. Balz	140
A. P. Strout.....	300
Munoz & Esprella.....	593
Total	38,494
Total Imports for July....	293,556
Total for June.....	190,931
Total for May	257,481
Total for April.....	200,383
Total for March.....	277,459
Total for February.....	244,526
Total for January.	222,308
Total for December.....	208,196
Total for November....	297,100
Total for October.....	207,715
Total for September.....	140,756

BOSTON ARRIVALS.

JULY 9.—By the *Bothnia*=Liverpool: POUNDS.

Reimers & Meyer, Africans.....	1,900
JULY 10.—By the *Taria Topan*=Tamative:	
Ropes, Emmerton & Co., Madagascar.....	47,800
JULY 10.—By the *Columbian*=Liverpool:	
Reimers & Meyer, Africans.....	37,000
JULY 16.—By the *Paronia*=Liverpool:	
Reimers & Meyer, Africans...	6,400
JULY 23.—By the *Scythia*=Liverpool:	
Reimers & Meyer, Africans.	12,000
JULY 24.—By the *Scythia*=London:	
George A. Alden & Co., Africans.....	12,000
JULY 31.—By the *Cephalonia*=Liverpool:	
Reimers & Meyer, Africans.....	14,000
Total Imports for July.....	131,100
*Total for June.....	215,470
Total for May	172,664
Total for April.....	185,500
Total for March	221,400
Total for February.....	525,513
Total for January.....	309,640
Total for December.....	255,120
Total for November	297,100
Total for October	100,650

* Exclusive of Pará, by *Annie R. Bishop*.

NEW ORLEANS.

JUNE.

	POUNDS.	VALUE.
From Nicaragua.....	43,323	$18,775

SPINNEY, VIRTUE & CO.,
Manufacturers of HARD AND SOFT RUBBER GOODS
FOR MECHANICAL AND ELECTRICAL PURPOSES.
Works at LYNN, MASS., U. S. A.